SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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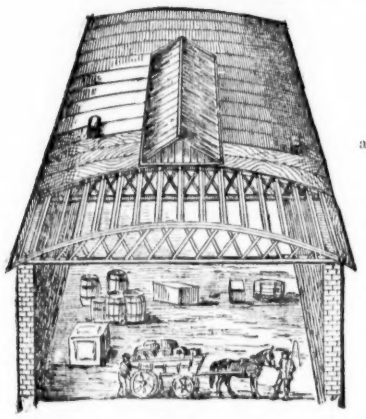

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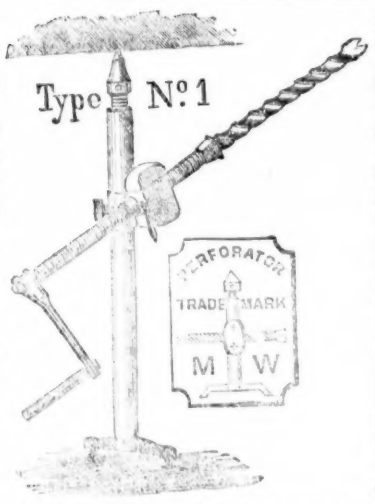

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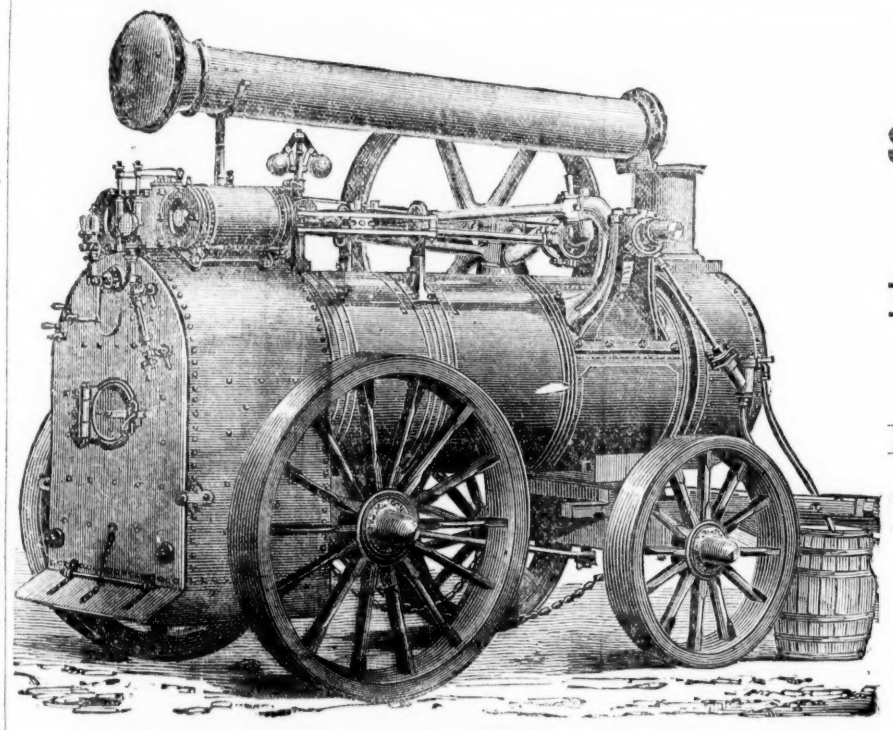

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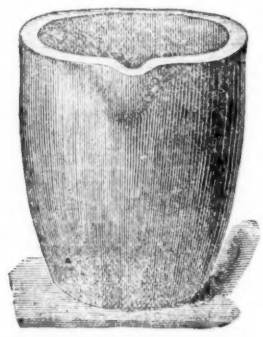

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Original Correspondence.

THE EMMA MINE.

SIR,—My interests are wholly opposed to bolstering up or even recommending United States mining ventures, but in justice to Prof. Silliman, and other eminent men who reported upon the Emma Mine, I submit the enclosed letter from a Nova Scotian friend, recently from Utah, whom I met a fortnight ago at Halifax, and whose word and judgment may be fully relied upon.

London, Jan. 28. ACADIENSIS.

"I returned from Utah about three months ago, and as you leave in a day or two for England, where so large a proportion of the shares in the Emma Mine is held, it may be interesting for you to learn my views of that mine, as they have been formed from all I could hear and learn concerning its present state and future prospect. I spent the months of January, February, and March last at Salt Lake; and from frequent conversations I had with different people about that mine I was led to entertain a very high opinion of its value, and the conclusion I came to with regard to the depreciation and rapid fall of its stock was that a successful attempt was being made by designing persons to manipulate matters so as to get control of the mine. A gentleman, educated at the London School of Mines, with whom I frequently conversed about the matter, who had no interest whatever in the Emma, gave it to me as his opinion that that mine was then as good as ever it had been, and expressed an unhesitating faith in its high value. He thought it impossible that the ore could give out entirely, stating that though for some feet they might have only a trace of ore, they would, if they persevered in following the indications of it, certainly again meet with large and rich bodies of it. Again, I was informed by a miner who had been working for me in the southern part of Utah, where I was interested in some silver and copper mines, and who had left my employ to work in the Emma Mine, but who left that mine and returned to the district where I was engaged in mining, that the ore was then (in May last) being taken out in quantities, and some of it (the richest kind, he told me) being stowed away in drifts, and thrown over waste dumps. I considered this miner an honest and trustworthy man, and cannot conceive that he had any motive in misrepresenting. In fact, the opinion seemed to me to be general that a game was being played in order to make the Emma shares worthless in the London market. The only means of obtaining information as to the state of the mine was from one of the miners who was then, or had recently been, working in it, as strangers were not permitted to examine it. The man to whom I have referred told me that the miners employed in the Emma were prohibited, on pain of dismissal, from giving any information to outside persons respecting the state of the mine. All these things look, to say the least, suspicious. Although I never desire to mix myself up with matters that do not concern me, yet if you have any friends who hold stock in this mine, and now purpose to get rid of it, you ought to advise them to look narrowly into matters before selling out."

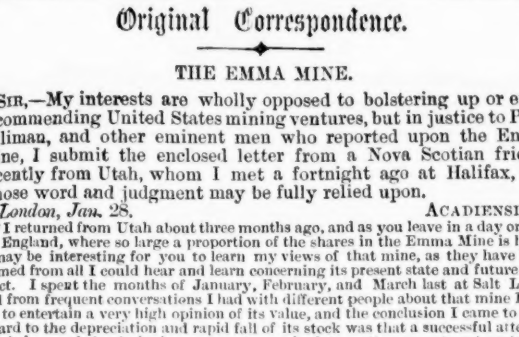
MINING IN UTAH—CAMP FLOYD COMPANY.

SIR,—Having received further data, I can now give more information to the shareholders, and also answer the "Owner of 500 Shares." The mill has been working on ores purchased, as well as custom ores, and has given a profit of $20,000 in the five months ending November, which it had up to that date worked, and for which period the accounts are rendered. Out of said profits about $2500 of old liabilities had been paid off—$2000 for reconstructing furnace, to work on Stetefeldt principle, and with permission to use the same; $3000 stock of ores on hand, &c., form the principal items, the particulars of which will soon be in the hands of the shareholders. Mr. Baxter, the manager of the mill, advises that another battery of ten stamps, as was originally intended, should be erected, as well as a pan for the tailings, which are now valued at some $60,000. The Sunnyside Mine, which had supplied a large amount of milling ores, was steadily improving, and likely to supply still larger quantities of ore.

The "Owner of 500 Shares" wishes to be secured against the trading experiments of the company's agent, Mr. Henry Sewell, and his friends, who never cease to promise, and never begin to show results. Considering that Mr. Sewell has only been managing Camp Floyd for five months, that he has not received any salary, and that rather than the property should go to ruin, or be sold for fancy stock, he has employed his own capital to obtain the above-mentioned profits, including the payment of old liabilities, there is little doubt the shareholders will approve of the results.

The "Owner of 500 Shares" frankly confesses he wishes to purchase the mill for his own mine, with the stock of which he would like to pay the Camp Floyd owners; it will be for the latter to decide if they approve of that trading experiment. I know that custom mills and custom smelters do work to a fair profit, unless under exceptional circumstances, having had some experience, and I believe that a continuous supply of ores may be expected, since Mr. Baxter advises the erection of additional stamps. It is evident that Mr. Henry Sewell would not have risked his own money in the management and working of Camp Floyd, unless he had had such a knowledge of the locality and business as made him pretty certain of the results. Of course he held a certain amount of stock, and consequently had an interest in saving the property; but, besides, he risked his reputation as a milling and mining engineer; of the first we have proofs in the profitable results, and as regards the mines he will be able to prove his favourable views when he is allowed to work them. That large sums were spent "in vain" on the mines during the former management is quite clear from the report of Mr. Bredemeyer, as shown by his plan and sections, of which I select the following:—

SECTION NO. III.



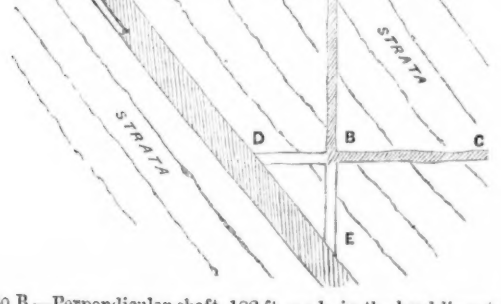
A to B.—The works were carried down on the lode.

B to C.—The incline was driven into the hard limestone out of the lode, instead of being continued towards E.

D.—Rich branch or feeder which crosses or drops into the lode at E, which point would have been proved had the work been properly directed.

The distance from B towards C, uselessly worked, appears to be some 80 ft.

SECTION NO. II.



A to B.—Perpendicular shaft, 182 ft. sunk, in the hard limestone.

B to C.—Drift driven some 160 ft. in the hard limestone, which should have been towards D; but in preference the shaft should have been continued to E, to cut the lode and prove it at about 200 ft. deep.

F.—Working on the lode by Henry Sewell, in which a rich seam of antimonial silver ore has been found.

There are several other shafts also driven in the limestone, which have not reached or proved the lode.

The reports on the mill and mines, by Messrs. Baxter and Bredemeyer respectively, will be distributed amongst the shareholders, no doubt, very shortly, and they will be able to judge for themselves of the value of their property. The collapse of many companies is due to the ignorance in which shareholders are generally kept of the operations; and I prefer, as far as I am able, to afford information, and trust to their support in favour of the views expressed. I may add that on the ores purchased the full profit is credited in the accounts, although the capital is borrowed, and only the milling profit was absolutely due. JOHN P. SEWELL.

10, *Upper Westbourne-terrace, W.*

TECOMA AND FLAGSTAFF MINING COMPANIES.

SIR,—The *Mining Journal* of last Saturday contains a letter headed "Tecoma and Last Chance Mining Companies," and signed "Shareholder," wherein the writer urges his brother shareholders, especially in the Tecoma Company, to combine, and see if some considerable part of the immense amount (as it proves) of 280,000*l.* paid for the property cannot be got back from the vendors as a refund, and states truly that "refunds" have been made by vendors in other cases, and that the Tecoma case is a very strong one. I believe that Colonel Stanford gave back as much as 50,000*l.* to the South Aurora Company, and it is to his honour that he did so.

Happily I had no concern in the Last Chance, but I am a director of the Tecoma and Flagstaff; and just because I am so it is the more incumbent on me to recommend my fellow-shareholders in the Tecoma to attend the meeting to take place on Monday next, at two o'clock, at the London Tavern, and to take into consideration more especially the agreement lately made with one of the vendors, as referred to in the directors' reports. I had no share in that agreement, nor in that part of the report which speaks of it, and I consider it calculated to be very injurious to the shareholders, if only for this reason—that if, as I believe, we have a good claim on the vendors, they are the last persons we ought to have *borrowed* money from and handed over the mine to. The small sum agreed to be *lent* by Mr. Davis should have been *given* as in part of a larger total, and our property left in the hands of Mr. Stephens, our manager, who appeurs to be doing his duty well. The shareholders should see his letters showing the way the new arrangement is working. I believe the new arrangement could now be got rid of, but before long it may be too late. It will be seen that the report states that "three seats of directors are at the disposal of the proprietary."

In the case of the Flagstaff Company, there is a meeting next Monday at twelve o'clock, but only to adjourn. The meeting on Feb. 23 will be very important, and doubtless will be fully attended. There is an agreement with Mr. Davis here also, which should, I am sure, be got rid of or modified, though it will not be so easy here as in the case of the Tecoma. I had no concern in this agreement either, and I am satisfied it might have been avoided had a special meeting of the shareholders been called, as it should have been. The *Mining Journal* of Oct. 11 had two very good letters, signed "R. N." and "M.," on this subject, and I felt so strongly what was said that I urged the other directors to call a meeting, but I am sorry to say I could not succeed. On Nov. 14 and 21 I moved formally resolutions to that effect.

I would urge on the shareholders of both companies to attend the meetings, to look well (among other things) into these agreements, and in the meantime to suspend their judgments, and not to pledge themselves in any way for the present. I proposed not sending out proxies, but that all should be left to the shareholders after hearing all, but I was overruled in this also. W. MAITLAND,

Director of Tecoma and Flagstaff Companies.

Great Winchester-street, London, Jan. 29.

MINING IN NEW SOUTH WALES.

SIR,—Since the reaction, caused by losses during our late mining mania, scarcely any new enterprises have started, but amongst the most noticeable is the opening up of a large coal seam, about 12 ft. thick, at Catherine Bay, between Sydney and Newcastle. A jetty has already been run out some 700 feet, at which vessels drawing at least 12 feet can lie and load, and the cheapness of the coal, from the easiness of working it, and the saving of labour, will make this mine a formidable competitor to Newcastle.

As to IRON, although we have immense deposits, both of ironstone, iron-clay, and blackband iron, with coal alongside it, no one here yet thinks it worth working; there are large beds of it within 60 miles of Sydney, on the main line of rail, and about 80 miles up the coast is a spot where thousands of tons of ore are on the surface, and could be got and delivered at Newcastle (where small coal is 3s. per ton) for 20s. per ton.

COPPER.—One of the most noticeable things in connection with this is that *at last* a practical smelter is erecting furnaces and works for the purpose of buying up and smelting ores, as hitherto each mine has put up its own works, and coal has never as yet been used in the interior. Now, however, that coal is opened up at Bowenfells, on the railway, near to Bathurst, a Mr. Lewis Lloyd, late manager of the great Goodrich Copper Mine, and formerly of Cow Flat Mine (out of which he made over 20,000*l.*), has arranged to connect his works with the main line, the furnaces only being about 100 yards off it, and to buy all the ores from the Essington, Apsley, Bathurst, Northern Cow Flat, Copper Hill, Wiseman's Creek, Fullbeck, Somer's, and other copper mines. This will give a great impetus to mining for 40 miles round, as from there to Carcour the whole district is a mineral one; and there are hundreds of small farmers who have copper lodes on their property—not rich enough to warrant erection of furnaces, and yet sufficiently good to give them a profit on their labour when certain of a sale. Mr. Lloyd's furnaces, sheds, tramway, &c., will cost about 6000*l.*, and he expects to run about 100 tons of ore per week. Coal will not cost him more than 3s. per ton, and as the works are just on the border between the coal and copper country, and the railway will run through the heart of the latter formation as it goes on to Orange, the enterprise bids fair to be a great success. About 10 miles from his place a copper lode has been found, forming the backbone of a high narrow ridge, about ½ mile long, and which can be tunnelled into within 250 feet, at a depth of 400 ft. from surface, and the owners of it have not enterprise enough to spend 100*l* to do it! This shows how apathetic our mineowners are. Perhaps so near a market for the ore may at last waken even them up.

GOLD.—Nothing very special; the great bulk of the "companies" have collapsed for want of "calls;" but still very many of the reefs are being steadily opened up, and returns are being now got at last. A very rich find was made at Bingera, about 400 miles from Sydney, the reef about 18 in. at surface, carrying heavy gold down to 20 ft. (the present depth of the shaft); it is estimated that the few tons raised will give quite 2000 ozs. Hawkins' Hill has not made any very rich finds lately, the most noticeable fact being that the main run of the rich lodes is proved to go for Holman's Paddock (10-oz. stone now being got alongside it. This spot was looked upon as the *experimentum crucis*, it being the only freehold gold mine on the hill, and the general belief being that the run was to the west of it. Brown's Creek deposits are now attracting more attention among capitalists than any other gold mines, as the enormous size of the lodes (20, 40, and even 300 ft.) will make a few pennyweights return a fortune. The two rival companies—Brown's Creek and Brown's Creek Freehold—will both start work about Christmas, and as they have respectively the two most powerful and complete plants in the colony, great interest is taken in the result; trial crushings (with new buddles) of surfacing gave 7½ dwts. per ton, and as the old machines only averaged 4½ dwts., and even then returned 200 per cent., the shareholders are jubilant. Hitherto we have never fairly tried these large low-quality deposits in New South Wales, and should these mines prove even half what is expected, it will revolutionise our ideas, and open up very large tracts now lying idle for want of capital and proper machinery.

CINNABAR exists, but every effort to really find the main deposit has failed as yet.

TIN is steadily being developed, but at present only the alluvial, though fine lodes and reefs have been found at Timbaria, Prince of Wales, and other mines. (I am now paying tributers 30*l.* per ton for clean tin on the ground.)

DIAMONDS are still being freely got at Bingeia, plentiful but small; and even at Sofalu, near Bathurst, a few very good ones were got last week.

SILVER.—The only mine is now idle; it is a fortune if properly handled, but has been "meddled and muddled" to death.

ANTIMONY and COBALT being occasionally "scratched over" by their lazy and indifferent owners.

PLUMBAGO.—A 3-ft. lode just found; as nobody understands it there it lies idle.

ALUM.—A hill of it found last week; total cost of getting and putting it on board ship in Sydney about 6*l.* per ton; but nobody understands it, and nobody cares to!

GOLD CEMENT.—About 160 miles to the south the farmers have been "mending their ways" with a gravelly conglomerate, which runs over a hill, or rather principally forms it. By the merest accident gold was found in it (after rain), and a trial crushing showed over 5 ozs. per ton, though not a spec can be seen in the stuff. As it would cost a few hundred pounds to erect a crushing plant to work it, and no one has either faith or money for it, there it lies idle, and likely to. If Victoria had such deposits and mines as we have her enterprise would develope such riches as we never dream of, but then, as she has not the large pastoral area we have, her mining industry is her mainstay.

Crushing plants of the newest and best makes, belonging to frightened or insolvent companies, which cost from 1500*l.* up to 5000*l.*, 12 months ago, can now be got from 300*l.* up to 1500*l.*, the latter being an enormous price! Of course these terms will not last in the face of the "eight-hours system and rise in iron," and all of us (who can) are securing them against the reaction which a few dividend-paying mines will again bring about. But, in the meantime, *now* is the chance for capitalists or speculators to secure at almost nominal prices the pick of the country and plant in New South Wales.—*Sydney, New South Wales.* R. ADAMS.

MINERAL WEALTH OF QUEENSLAND.

TIN.—For the month of October there was received at the Warwick Railway Station 650 tons 13 cwts. 1 qr. 21 lbs. stream tin, and since the following has been received—for week ended

Nov. 7	175 tons	3 cwts.	3 qrs.	9 lbs.
Nov. 14	131	3	0	21
Nov. 21	155	6	2	20

Showing a slight increase on September, and so far a slight increase during the above portion of the present month. The continued fall in the price of tin in England, as advised weekly by telegram, is causing considerable uneasiness amongst our merchants and exporters, who are now afraid to purchase so uncertain an article for exchange. The consequence is the large producers must either ship or store (several I know are adopting the latter course), while the small miners (working men) who, as a rule, are compelled to sell on the spot, have to submit to prices that, unless they are in very rich ground, will not pay. Again, the long drought which has terminated this week gave holders of low ground an opportunity of working some of their rich leads with tolerable success; but against this most of the high claims have had to suspend work for want of water, throwing over 200 men out of employment.

The subject of smelting on the spot is receiving considerable attention, and efforts are being made locally to float a smelting company, with works at Warwick or Allora, where there is a splendid seam of coal, 8 feet thick; while the Mount Marlay Tin Mining Company, I understand, is about erecting furnaces of their own on the mine; and, lastly, the Brisbane Company are fast pushing their new furnaces ahead, their stock of tin on hand being now over 100 tons. The exaggerated reports sent to England as to the quantity of Australian tin actually produced has been severely commented upon in the Queensland press. A private circular which has got into print states that "New South Wales and Queensland are now producing 15,000 tons a year." This, I can assure you, is more than double the actual amount produced, and such statements have, no doubt, been the chief cause of the fall of the metal in your market. The official returns which I have procured for you can be relied upon as correct, and as to future supply, I am certain that if the market drops anything lower you will see a great falling off in the supply, as it will not pay the high wages men get here.

COPPER.—Little is doing, although we have an enormous extent of copper country, but I expect to see a considerable stir taking place so soon as the price reaches 100*l.* per ton.

PLATINUM has been discovered recently at a place 250 miles inland from Rockhampton, so far it has been found in connection with gold in the alluvial. The prospectors, from the indications, expect shortly to find the lode.

Stream tin has been found 20 miles outside Ipswich. The prospectors refuse to show the place until the Queensland Government promise them a money reward.

The Palmer gold field is now a fact without doubt; it is a river (dry in summer) not found on the published maps of Queensland, but which lies about 144° east long. and 16° south lat., it is within 120 miles of the Endeavour river, and from the report yesterday received from the Government officers (given below) it is without doubt the most extensive and richest gold field yet found in Australia.

Coal of good quality and in great quantity has been also discovered by the same party within 12 miles of the Endeavour river, this will be of great advantage to the new Torres Straits mail service.

What effect the Palmer gold field will have on the Stanthorpe tin fields remains to be seen, but as all the tin diggers are gold diggers, it would not surprise me to see the whole country abandoned about February next. Gold diggers are very uncertain people to depend on I assure you.

Metals afloat from Queensland to arrive *ex* Martaban, sailed from Brisbane, Oct. 30, with 755 ingots tin, 366 casks 58 kegs tin ore, and 1877 ingots copper; to arrive *ex* Decapolis, Nov. 25, 739 ingots copper, 670 ingots tin, 331 casks and 442 bags tin ore; to arrive *ex* Lota, Nov. 3, 3400 large cakes copper.

The tin lodes in Queensland are receiving attention, as will be seen from the following extract from the *Border Post* of Oct. 31:—"We append a copy of a wet assay (made by Mr. Stieger, the Government Analytical Chemist) of lode tin from the selections of Messrs. Barton and Brunckhorst, adjoining those of Mr. Davenport, at the Red Rock. We hear that a company is being formed to work the same, in which English capital will be employed. 'Chemical Laboratory, Oct. 28, 1873. Mr. Thornlow,—Sir, the sample of lode tin (large crystals) assayed by wet assay 71½ per cent. of metallic tin.—J. THEODORE STEIGER.'" . . . "There is a great amount of tin ore in hand on the mines, ready for transmission to Brisbane as soon as the tin market improves. The long-continued dry weather has afforded owners of wet claims a good opportunity for raising the ore."

From the *Brisbane Courier*, Oct. 25:—"Much has been said and written about the valuable minerals with which Queensland abounds. The southern portion of the colony has given abundant evidence, particularly within the last three years, that nothing has been exaggerated in the reports which have from time to time been made of rich discoveries of gold, silver, copper, tin, and other less abundant metals; but I venture to assert that the mines of the South will eventually prove poor compared with those of the North. Every day adds new fields for mining enterprise, and capitalists will yet find that investment in northern mines will be rewarded with ample dividends." RESIDENT.

COMPRESSED PEAT—CHEAP FUEL.

SIR,—I have received several letters of enquiries from very influential parties relative to the compression of peat, and I need scarcely observe that I have invariably given all the information in my power to those enquiries, but I am sorry to say that up to this date nothing has been done in the matter, and it is with a hope of calling the attention of the public to this scheme that I am now penning these few lines, thinking it not improbable that by making known the facilities for obtaining this article of fuel through your widely-spread Journal, that some party or parties may be induced to come forward and carry out the necessary arrangements for supplying the inhabitants of this and the surrounding counties with cheap fuel when it can be so easily obtained, more especially as the prices of coal are so ruinously high to all consumers.

I will first call attention to an immense bog, extending from Tregaron some miles to the south and west, where peat of the finest quality could be procured in abundance, and some millions of tons might be compressed from this place alone, and some thousands of acres now worthless be brought under a good state of cultivation. The Manchester and Milford Railway passes right through it, and would convey it at reasonable rates to any part of the kingdom. Again, in the neighbourhood of Booth, and extending to Tallyesin village, millions of tons of good peat exist, which could be com-

pressed at a small cost, and would bring in a vast quantity of ground for agricultural purposes, and through this bog the Cambrian Railway passes, and would convey any quantity of it northward.

It cannot be doubted that before many years expire steam power will be extensively required to work the deepest mines in this county, and in order to do so peat in nearly every case could be obtained near the mines; this would apply to the Lisburne mines, the mines to the east of Devil's Bridge, the Ponterwyd cluster of mines, the Aberystwith mines, the Talybont district, and Esgair-hir and Blaen Caenant; in fact, there would be but few mines that this would not apply to. I firmly believe that if these bogs were compressed, or, rather, the peat in them, by mixing it with a little small coal a better fire would be the result than with coal itself, and that it would be more lasting, and that if a good company were to take the matter in hand it would pay enormous dividends on the capital required, and cut off three-fourths of the quantity of coal now used throughout this county, not one pound of which is raised in Cardiganshire.

Goginan, Jan. 25. ——— ABSALOM FRANCIS.

COAL A DANGEROUS CARGO—No. IV.

SIR,—By publishing a full report of the proceedings of the Commissioners appointed to enquire into the cause of the loss of the Herbert Graham, you have on the one hand rendered an eminent service to the public at large, and on the other relieved me of the duty which would otherwise have devolved on me of again explaining the nature and causes of the chemical reactions by which spontaneous combustion is produced. It will, however, be readily understood that the evidence given before a court of enquiry of this kind must need be confined to the particular bearings of the case, and that for such a court it is next to impossible to enter into the whole of the question, involving, as it does, the examination of many arguments of more or less cogency, of many schemes of more or less value devised for the prevention of such casualties, and also of the simple and, to my mind, more correct methods of precluding the recurrence of similar accidents. Now, in approaching this question as a whole, and sifting it in such a manner as to enable the public to judge for themselves, and to decide on the means that may appear most calculated to produce the desired effect, it becomes the duty of those who have given their undivided attention to the entire problem to bring the result of their private research, and to state, in the plainest possible language, the mode and manner in which they propose to cope with and dispose of that most dangerous of all phenomena—spontaneous combustion. Having myself had exceptional opportunities afforded to me of observing this phenomenon, and having also been frequently called upon to co-operate with others in combating its pernicious effects, I now crave your permission to throw some additional light thereon, and contribute in the following my humble share to the elucidation and, if possible, solution of the question at issue.

In my letter, published in the *Mining Journal* of the 10th inst., I enumerated the agencies by the concurrence of the whole or part of which spontaneous combustion is brought about. The danger arising from the chemical composition of the coal in combination with smallness and the presence of moisture having been fully explained at the Newport enquiry, I need not revert to it again. The other cause of ignition—viz., that proceeding from the progressive decaying of the coal in the presence of moisture when stowed in a mass—is of less frequent occurrence, but still deserves to be noticed.

Coal has an undoubted vegetable origin, and forms the result of the decomposition of immense forests of pine and various other kinds of trees from which resinous matter is exuded. The great mass of the coal now in existence has been generated by the chemical metamorphoses of the substance generally known as lignine. In the course of the decomposition of lignine carbonic acid and water are amongst the principal products formed, and when aided by heat—which is always the case in the chemical re-actions accompanying such decomposition—some organic acids, and one or more of the numerous compounds of carbon and hydrogen are also engendered. In fact, the formation of coal is synonymous with a more or less complete process of distillation, beginning at its lowest stage with cannel coal, and ending in the highest and ultimate order with anthracite, which is nothing more or less than carbon in all but absolute purity, and forms, as it were, the equivalent of wood which has passed through a complete and destructive distillation.

From this it will appear that when any given description of coal has not yet arrived at the state of purity represented by anthracite it is actually in a state of decomposition, similar to the decay of wood in the absence of air. As I observed before, while that decay is going on a great heat is produced, and if air were then present the gases formed and disengaged would undoubtedly explode, take fire, and ignite the coal. The absence of air prevents the ignition; but if small bituminous coal is shipped as soon as it comes out of the pit it must in the course of the lading operation become mixed with a certain percentage of air, and although it cannot just then take fire, because the gases it continually disengages are diffused in too great a quantity of air by which they are cooled, yet when in the hold of a vessel it begins again to heat and disengage the same gases which after a longer or shorter space of time arrive at a temperature sufficiently high to produce their combination with the oxygen of the air, resulting in explosion and consequent combustion. Spontaneous combustion produced by reaction of this kind often takes place in heaps that have been made with hay or straw yet undried, and many fires that occur in agricultural districts may be traced to that cause.

Such accidents are not of common occurrence on board ships laden with coal, because they can only arise on long journeys and with coal unusually small, such as the kind generally shipped for the South of America.

These being the general causes of spontaneous combustion on board ship, it may now be interesting to examine what has been proposed and devised to counteract them, or to prevent or remedy their injurious effect. So many vessels are now engaged in the coal trade, and so many of these have of late been lost or damaged through casualties traceable and entirely due to the nature of the cargo, that it is not to be wondered at that a great many schemes of this kind have been brought forward; the whole of these may, however, be classed under three heads:—1. The mechanical washing of the small coal. 2. The ventilation of the cargo when in the hold. 3. The chemical treatment of the cargo.

In cursorily reviewing these different means of neutralising the dangers attending the conveyance of coals in ships' bottoms I do not mean to state any opinion as to the comparative merits of any particular system from an engineer's point of view, but only wish to penetrate and examine the object of the devisers, and ascertain under the guidance of my own experience and judgment whether they are able to attain it.

Of the washing of the small coal but little can be said. If spontaneous combustion were always due to the presence of pyrites, washing would, of course, remove part of the cause, but certainly not the whole of it. The idea of washing small coal is based on the difference existing between the specific gravities of small coal and pyrites, that of the former ranging between 1·2 and 1·5, while that of the latter is 2·7. In accordance with this it may be understood that if small coal containing pyrites is mixed with rather a large quantity of water, kept in continuous flow by means of mechanical appliances, the coal will be carried away by the current and the pyrites left behind. If all the coal shipped were small, or rather dust, coal the success would probably be complete, and the pyrites would be entirely got rid of. But in most instances the coal is shipped "through and through," therefore the larger pieces cannot be freed from their pyrites by such washing; and inasmuch as the pyriteous coals are in the majority of cases exceedingly brittle, the larger lumps will be broken up into fragments in loading, and the pyrites contained in them exposed to the action of air and moisture, and, consequently, the object aimed at will be wholly or partly frustrated.

Besides, as I explained heretofore, pyrites is not the only cause of spontaneous combustion, and this very means of combating this one agency of disaster must often tend to the further enhancement of those remaining behind. It is next to impossible to dry small coal in a short time, and, owing to the requirements of the trade, coal would have in most instances to be shipped wet, and as an immediate consequence of this the heat engendered by the decay would be quicker engendered and intensified, and the dangers of ignition increased. It is said the cost of washing a cargo of 500 tons would amount to 12*l.* 10s., or 6d. per ton. There is no doubt but that if by such a means immunity from accidents were secured this cost would be a trifle, but, as I believe I have shown that this is by no means the case, it practically amounts to a dead loss, and the use of this washing process should consequently be left to those who can turn it to a proper account—that is, to coke matters.

About the two other means of forestalling and neutralising accidents arising from spontaneous combustion I shall have a word or two to say in a future letter. A. VASSARD.

7, Carlton-square, New Cross.

CORNISH MINING:—HOW MINES SHOULD BE WORKED TO BE MADE MORE SUCCESSFUL AND PROSPEROUS.

SIR,—Seeing the keen competition which Cornish miners are likely to experience by the importation of tin from Australia, it is not surprising to find that various expedients are being resorted to to lessen the cost of production; but whether all of these are likely to accomplish the object sought or not is with me a doubtful question. For instance, it seems like child's play to be cavilling so much over the four-weeks month, which, after all, is but one step back into a system that has been the bane of Cornwall. If we are to take the officials summing up of the question, this means nothing to the miners: but evidently the miners do not think so lightly of it, or they never would cling to it so tenaciously. Why is it, then, they are so unwilling to return to the old system but that they have found from experience they can only have a certain amount of wages per month, and they naturally think the more months they can get the more money they will have. It is argued that the men being upon contract it will make no difference to them; but after long experience, both as a working miner and an agent, I have come to the conclusion that the system of contract known as "tutwork" is little better than a farce. Men know too well that if they earn a little more than the ordinary allowance the captains will contrive to make the extra gettings as small as possible, beside their having to work all the harder to get the usual rate of pay the succeeding month, hence we get the short hours and small amount of work done about which we have seen so much complaint lately.

I do not hesitate to say the vicious system of working which at prssent prevails in our mines has been induced by the cheese-paring policy followed by the agents. Everybody admits that Cornish miners are a steady, plodding lot of men; then why is it they are so eager to get their holidays, Maze Mondays, &c., and that we are obliged to have such an elaborate system of fines, and withal get so many absentees continually, and so little done? I answer, the only way in which it can be accounted for is that the contract system, as at present being carried out, is not believed in by the men. It has been stated over and over again in the Journal, and elsewhere, that Cornish miners will go across to America and work eight or ten hours a day for six and even seven days a week (a statement I have had from more than a score of persons), while at home they will only work an average of about 25 hours a week. And what does this prove, but that there is something wrong in the system under which they are working? I have no doubt but that I shall be contradicted by not a few persons in making these statements. I have made them before in the presence of agents who have been eager to assure me that they paid their men what they earned, and not more; but a few minutes conversation with some of their men has convinced me that such has not been the case, or at any rate, that the men did not believe they would be paid the money if they earned it. There is yet another evil that has sprung out of this system, and that is the best men we have get no more than the merest tyro in the pare, and the man who remains away from the mine a third part of the month takes the same portion of the earnings as he who has worked every core, which never would be tolerated but that the men believe it amounts to the same thing in the end, work where or how they will.

In conversation with a miner this morning, and when advising him to work, and earn as much as he could, he replied, "Why, you see, Captain, it always was where I worked in a copper, tin, or lead mines that the men took the thing easy, and had a little time; now, in coal and iron mines the thing is different, there what a man gets he can have, and they are glad to see you getting the money; but suppose we were to work hard here, and get a lot of money, why there would be row of the world, and we should soon be stopped, that's all." This man had spent some years in the North of England in coal and iron mines, and his simple reply goes to prove too clearly the opinion the men hold of their masters, and of the present system of applying labour in our mines. And what is the effect of this upon our mines? Why, a mine paying its way under the present mode of working would, if the men were put to work (say) 45 hours a week, give good dividends, and a call-making mine would become self-sustaining, while progressive mines would be developed twice as fast, and upon two-thirds of the cost. In fact, it would make such an alteration in the condition of our mines as would allay any further fears that we were not likely to be able to retain the position we have held for ages as the great tin-producing centre of the world.

The remedy is a very simple one, pay the men what they can earn upon the basis of the present prices, and none can grumble against it, since men and adventurers would alike be benefitted thereby. But it will require great industry and perseverance to carry it into effect. Managers and captains must pay assiduous attention to the amount of labour actually being accomplished. Constant and vigilant supervision only will ensure a fair amount of labour for the money. Good ventilation must be provided, and whenever practicable, means of descent and ascent into and from our mines should be secured. As at present, a large amount of costly labour is wasted in this way that might be easily saved; and if our agents will only throw aside the perversity with which they cling to old customs, introduce a better system of applying labour, and lay hold of any appliances that offer themselves, which will have the effect of supplementing this costly commodity, I am persuaded there will still be a long period of prosperity in store for Cornish mining.

A MINE AGENT.

CORNISH MINING.

SIR,—In my letter of last week I endeavoured to show the desirability of all friends to legitimate mining to further the progress of the development of new or unwrought ground; proof of this can be adduced by comparing the results attending the working of old worn-out mines with properties of this kind. At the Poldice Mines a considerable amount of money was spent to no purpose, when it was decided to abandon Poldice proper, and explore a piece of virgin ground comprised within the limits of the sett. The result is that with an expenditure of 150*l.* per month a course of tin has been discovered not far from surface, not even requiring a small call to carry it out, and at the first meeeting, next week, a respectable balance in favour of the shareholders will be shown. At The Lovell, at a depth of only 15 fms. from surface, a deposit of tin equal to 200*l.* per fathom was met with, which is continuing and giving regular dividends, the outlay amounting to comparatively a mere trifle; the tin here, as also in East Lovell, is embedded in what is known as the mineral-producing granite, and which to the practised eye is easily discernible from the non-mineral producing granite. The lodes of this district make what is known as "carbonas," or very wide and rich deposits of tin; that at The Lovell commenced to be rich a few fathoms from surface, and is even better in the present bottom of the shaft than it has ever been, while at East Lovell it has held down below the 100 fm. level, where it is still reported to be worth 3 tons of black tin per fathom, or equal to 200*l.* per fm. To the east, and adjoining these two mines, has been discovered another of those carbonas, which at 6 fms. deep has been seen to be over 20 ft. wide, and producing tin all through this great mass equal to 22 lbs. of tin to the ton of stuff, increasing in value every foot sunk. A prospectus of this mine (New East Lovell) may be seen in this day's Journal. All that is required to make this an equally valuable mine is the erection of the necessary machinery for returning its produce to the market.

I hope in my next to refer to other mines working on a small scale, to show that by a judicious and easy outlay large sums of money may be made, and that Cornish mining in new districts is yet in its infancy. CHARLES BAWDEN.

St. Day, Cornwall, Jan. 28. ———

RE-WORKING OF OLD DEEP MINES.

SIR,—A very sensible letter from the pen of Mr. Charles Bawden appeared in the Journal of last week. The suggestions contained in it commend themselves to the approbation of all men who are conversant with mines and mining experience. I have myself on several occasions advised the search after minerals either in shallow works of the ancient miners or in virgin ground, where lodes are ascertained to exist, in preference to the very expensive operations of unwatering deep mines. I may appropriately refer your readers to the results attendant upon the resumption of Great Wheal Vor (not Wheal Metal part of it), Great Wheal Alfred, Godolphin, East Crinnis, Trevenen, Great Wheal Fortune, &c. Great Wheal Vor when abandoned in 1844 was more than 300 fms. deep, but in 1851 or 1852 a company was formed for draining the mine afresh. That was accomplished—the bottom was seen, but not extended only a little, if any, distance before the mine, after a few years working, was abandoned, with a loss of 250,000*l.*, after crediting all the profits on Wheal Metal portion of the sett. Great Wheal Alfred yielded about 100,000*l.* during the first company's work; after that poverty ensued and abandonment. About the year 1824 another company re-opened it, and retired with a loss of 80,000*l.*; afterwards another company followed, with a loss of 150,000*l.* East Crinnis yielded Messrs. Taylor and Co. about 110,000*l.*, subsequently another company lost 150,000*l.* on it. Godolphin yielded Messrs. Williams and Co. 90,000*l.* profit; another, or other, credulous speculators re-worked and lost 150,000*l.*, or thereabout. The loss sustained on the others I have named I do not recollect, but these experiences show the folly of re-working old mines given up on account of poverty. You may be sure that no company would abandon a rich, or self-supporting mine. The losses in such mines as these militate against fair speculation—*i.e.*, in really eligible shallow mines, such as Fortescue Tin Mine, New Great Consols, Penstruthal, &c. If gentlemen when asked to take shares in old deep mines would only exercise their common sense they will avoid them as unworthy of their attention, and place their capital in more hopeful enterprises.

Truro, Jan. 27. ——— R. SYMONS.

MINING IN CARDIGANSHIRE—THE DARREN AND BRONFLOYD DISTRICT.

SIR,—Being well acquainted with the mines in this district, and thinking that a short account of them might interest the readers of the *Mining Journal*, I beg to submit the following for insertion in your columns:—Wandering on the sea-shore north of Aberystwith we come across, about two miles from the Queen's Hotel, a very picturseque valley, called in Welsh Cwm Clarach, which runs inland in a direction from about north-west to south-east, and on examining the rivulet, which flows through this valley, we will find that it is so poluted by lead refuse and washings that it has very much the appearance and consistence of buttermilk. The banks, also, of this rivulet at once strike the eye as being denuded of their natural verdure; this denudation is caused by the rivulet overflowing its banks at seasons of heavy rain and flooding, carrying over the meadows adjoining, and depositing thereon, the poisonous slimes and washings, and thereby destroying all vegetable life. Following the course of the brook upwards about 1½ mile distant from the sea we pass on our right Cwm Church and Cwmeynfelin Hall, the residence of Capt. Cosens; further up the brook passes under the Cambrian Railway, and turnpike-road between Aberystwith and Machynlleth, and at about 3 miles distant from the sea we get into the direct road to the mines from the port of Aberystwith. But I must not forget to mention that about here we pass Gogerddan Hall, the seat of Sir Pryse Pryse, Bart., who is lessee of most of the mines I am about to describe, and who most certainly is the best lord in the county, giving to *bona fide* mine adventurers every possible opportunity to prosecute their works to advantage. About 1 mile further up the valley is the village of Penrhyncoch, which has a population of some 800, chiefly supported by the surrounding mines. Continuing our journey two miles further, and six from Aberystwith, we come to the first mine in the valley—the well-known BRONFLOYD, which in 1871 made 4000*l.* profit, but unfortunately is now barely paying cost. Very extensive and expensive dressing-floors have been spread over a large space of ground adjoining the bed of the river. About half-a-mile of Hodson's Patent Tramway has also been erected to convey the dressed ore from the floors to a point where a good road can be had to the railway station, and to obviate drawing it over a very steep hill and rough road. The general appearance of these works and machinery is very neat, and does not detract one fraction from Mr. J. B. Balcombe, the energetic managing director's, well-known taste in white and red brick facings, nice blending of different coloured paints, &c., but their real practical worth and utility is *nil:* and Mr. Balcombe was certainly ill-advised (it is said by a certain *protege* of his of the name of Davis) in expending so large an amount on useless works. I say useless—for instance, Hodson's Tramway is more trouble to work than the little extra carriage over the very steep hill, &c.; and besides it is useless, inasmuch as no materials of any description can be sent over it to or from the mine. All it does is to send some 25 or 30 tons of ore down every month. All the material have to be carted right away to the mine, and the carriers would almost as soon have the ore as back carriage as we go to the stores at the end of tramway for it.

Again, what has become of Dingey's Patent Pulveriser, which was to return from 4 to 6 tons of rich silver ores per month from stuff that Capt. Kemp, the late agent, had been throwing into the river? This, also, I regret to say is a complete failure, for instead of returning from 4 to 6 tons of ore per month, it never made 4 lbs. during the time it worked, and took all the power of a 25-ft. diameter water-wheel to turn it. Then, again, the dressing machinery is very badly arranged, considering that it was reported with a loud flourish of trumpets as the van leader. Capt. Kemp, above alluded to, has repeatedly told me that it cost about 15s. per ton to dress the ore by the old system. What does it now? More, I venture to opine. Some tempting accounts of some valuable properties of ordinary gas coke in saving the silver said to be going into the river and thence into the sea, as Mr. Ennor has it, were circulated as having been discovered by the Bronfloyd engineers, and that slime pits on a novel plan were being made with the gas cokes laid therein to save the silver. Elaborate calculations of the value of these savings, *a la* Barnard, were gone into, enough to shock the public generally at the loss in silver and lead ores made annually through not having such means as the Coke slime pits to save them. How much silver and lead ores have these pits saved? How often are they cleaned out? I no not know, but the returns have fallen from some 50 tons in four weeks to 30 tons. So much for such chimerical improvements and discoveries.

With regard to the machines themselves, there are some few of acknowledged merit, such as Blake's powerful stone-breaker, the Mineral Dressing Machine Company of Glasgow's jigging-machine, but they are so wretchedly arranged that they have no chance of doing the work they are doing elsewhere at the same cost, and it is very much to be regretted that Mr. Balcombe has permitted himself to be led into such mistakes. That the mine wanted machinery there there can be no doubt, and if a sum of about 2500*l.* to 3000*l.* had been judiciously spent in making a new road from Cwmbwa Mill along the river to the mine (instead of Hodson's tramway) putting up a more powerful wheel for pumping and drawing, erecting a compact and well arranged dressing-floor, and opening the mine, Mr. Balcombe and the Bronfloyd shareholders generally would have better cause to be pleased with their prospects than they have at the present time.

With respect to the mine itself I will say but little, as it is well known to be one of the best properties Cardiganshire can boast of, and they are not a few. The lode, or, rather, lodes, are of the most masterly character, and have produced as much ore as any mine in this district for amount of ground wrought. With a change in the local management of a vigorous practical nature, in lieu of the present sleepy, unpractical one, I yet hope to congratulate Mr. Balcombe,

as I have often done before, in having the best mine in the valley; but I cannot go to the lengths that Mr. Sampson Trevethan, the well-known mining engineer, did when he said "that a greater than Van was here."

Next week, Mr. Editor, I intend giving, with your kind permission, a few particulars of some of the Darrens higher up the valley.

ONE WHO WISHES TO SEE MINING PROSPER.

Aberystwith, Jan. 20.

N. ENNOR ON PRACTICAL MINING.

SIR,—It may be thought that I have been too hard upon our home miners in my two last letters for their not having found paying mines; I will now call their attention to what I consider the cheapest and best plan to do so. I have ever contended that lodes and cross lodes should be first found by a good system of pitting and trenching; every lode in the sett should be found before a deep shaft is sunk. I say more, do not sink a deep shaft before you know every intersection in your sett, and their character. Without intersections nearly every lode is worthless. A change of rock may help them. If you find this to be the case generally, why do you mine on single lodes? I have said before that it is not every intersection that causes paying lodes; it is often dependent upon the direction they meet each other, the contents of the rock, the contents of the lodes in it, and the direction in which they cross the rock. This is a point I have to call miners' attention to. In all my life I have not had my attention called to this interesting point. Miners should surely know that every paying lode crosses the rock it runs through. A few floors that run with the rock may produce beds of iron, but it is not a general case. No one has ever called my attention as to the best direction in which the lode should meet the strata. Nothing annoys me more than to read reports from miners called good practicals: they in nearly every case wind up by saying the strata are highly mineralised, and in a good geological position. In the latter they may be right. Any mining practical might well know, and say, his mine joins a particularly old productive mine, such as Dolcoath, a mine that has been raising ore, I may say, for two centuries, which proves it to be in a good geological position. A mine near it may be considered much the same, but it must be remembered that I say this is not at all times the case. Look at the Devon Great Consols; no second such mine is found near it.

I see very good reasons for Dolcoath having produced paying ore. It has many lodes near each other: some intersect each other, and in such case they aid each other. Then, look at its geological position: find me the like. It has been worked down into the primitive granite rock that was overlapped with clay-slate. These two rocks meeting might be thought sufficient to produce a paying mine for both tin and copper. This is not all—it has in it a beautiful freak of Nature that aids it. See the two granite hills that have formed there; one is visible south at surface, and the other hidden under the clay-slate north. The north one rises up 80 fms. high, forming a trough between the two granite hills, and this is filled with killas, commonly called clay-slate. Then, two of its lodes come down through the clay-slate trough, producing copper and tin. Near the centre of this trough they near each other, so as to form almost a junction at the entering of the granite. Then, every substance the killas contains, and that forms the two granite hills, falls in and aids those two lodes. They run in the trough for a great length, and have every substance contained in the rocks to aid them. Then, the earth's gases are brought up through them from the interior. These two lodes go down together; each keeps its own side. If they happen to make a little off from each other the middle gets filled with gossan, which is a true sign that a chemical action has gone on below. This speaks well for the continuation of the lodes down for some distance. Some day they will part company; in that case it is nearly over with the production of paying tin. East Wheal Rose is almost a similar mine to these. The lodes meet and run together for about ½ mile, when they again part company. They were very productive while they kept together, but each was worthless after they parted. Gossan is a good omen in the bottom of any mine. I once saw it in a lode at the bottom of Wheal Basset and at West Wheal Frances, but I have only seen it at the bottom of five or six mines throughout my life. The best intersection I know is two lodes that have met, or run together. They combine their substances, cause a chemical action to take place, that forms ore, and causes the gossan to form over it.

Turning, again, to the practical holding out that the stratum is highly mineralised, what can he mean by that? Will he show me a single primitive rock, or one of the first three or four layers above, that is not mineralised by a something? As all rocks contain minerals, acids, salts, or alkaline substances, then what do these rocks contain? Is it anything that will join and form the ore they are in search of in the lode, or is it pernicious to the growth of ores? These are the main points that the practical man should learn, and he must learn, otherwise he will ever remain in the dark, and get "licked," and sent about his business, like the kicked-out dog. He must bear in mind that he has, to a certain extent, opened the eyes of every nation in the world that has ore to value, and these nations will learn men how to work as miners in ten years. In every clime the new miner will even know more than they know. He will know to some extent what his rock is mineralised with. I was in a broker's office in London a few days since, when the broker said he had to do with a mine that had a fast, but active, young man as a captain. He had held out they were about to have a good discovery shortly in the mine. The week's report had just arrived, but no discovery was made, further than he said the strata were highly mineralised. I was requested to explain what he meant. I could not answer that question, as he had given no description of the rock, its colour, or the nature of the substance. I said the better plan would be to send his report back again, and ask for an explanation as to the substance and colour.

Lodes in the earth are only compared to the trees that grow the fruit; they are as the veins and arteries that carry the blood out and in, like unto man and every creeping thing. Notice, I do not charge the practicals wholly with the deficiency, or the recent mine captains; it is, to a certain extent, out of their element. It is a thing they should have been instructed in, and good books handed them to show it; but no miners in any country in the world have been so neglected as the Cornish miners have. In every country on the Continent that has paying ores they have good schools founded to aid their miners. Even the legislators have long since learned they have to look to minerals to support their millions. Then, I may ask who among all the great landowners who have obtained their wealth from mines ever left a 5*l.* note towards a school in Cornwall to enlighten the miner? They may have done so, but I never heard of one that did in Cornwall. The miners have been left to do their best, and grope their own way in the dark, just like our former self-taught engineers, and they did wonders. Every sane man who is a well-wisher to the nation sees the necessity of enlightening the neglected miners. I think Prince Albert, when he found himself mixed up with the Duchy, saw that the English miner was neglected. It caused him to make an effort to establish a school, something on the same system as those on the Continent, but he, by mistake, established it in London. The practical man, or working miner, never gets the least benefit from it. If he goes to London he dares not put his head in to see a chemical act performed, or to hear a lecture, until he has put his hand in his pocket and paid his fee. I have ever had a hope that something would ultimately come of it. I knew that they had a good chemical laboratory attached to it, paid for by the nation, and that the miner, mines, and mining contributed their full share to its payment.

I have been about 20 years under the expectation that the chemist would analyse the rocks about lodes, and give to the miner in a book the contents of granite rock about every lode prolific in bearing tin, and show how that agreed with granite that did not bear tin; then show what the granite contents that bore tin and copper, as copper is out of place in granite. Copper does not grow in the Devonshire granite; then show the contents of the granite that bore tin and copper in Cornwall, as the Devon granite is not made up of the same contents. Then, I ask them what the slate should contain over the granite that bears tin and copper? This slate over the granite is the real copper-bearing rock; but tin often passes up from the granite into it, and copper seldom passes down into granite. Then show us the contents of the slate rock about good copper-bearing lodes, and about lodes which are not prolific. Then, over this slate a second layer of slate is formed, that bears lead and zinc. Tin seldom passes up from the copper layer into this layer. At times carbon, or lime rock, comes in above this layer, and lead often passes up into it in quantities. At times it has a thin layer of sandstone between these layers of limestone. I may venture to say this rock has borne more lead and zinc than any other layer known. Copper often comes into it, but seldom in quantities. Then, I ask what elvans should contain near productive tin or copper lodes, and why they run in dip as lodes do, and have smooth sides? I may go further, by way of opening the question, and ask—What is the use of arsenic in lodes? Will they explain the use of it in their books? This is quite sufficient to show how the miner has been neglected by the more educated classes of book writers and professors. I ever contend that our Government-paid chemists should work in this field, and keep those in the laboratory at work, and let them work out their own salvation. Let them, too, write a book for the practical miner's guide, with drawings to show the true size, or rather over, of every substance in the rock, with its own colour. If drawn a little over proper size it could be detected by the eye, and it should be on the same leaf, on the opposite side that described without turning a leaf. Any miner finding a stone should break it across the grain, then let him take it home, and compare it with his book, and see what he can make of it, when I believe in fifteen cases out of twenty he will know what it is. I know these men, through shame, will say to me that the change of a single part will alter appearance and colour. This I admit, even half a part will do it; but I come to the point, and ask how many ores there are in Cornwall that will pay for raising that the eye could not detect? Then, every rock and ore has its own colour. Show them in your book in both form and colour.

I know granite near Mortenham-street that grows its felspar in its own crystal 6 in. long, but it is not mineral-bearing. At Wheal Coates, St. Agnes, the felspars are to be seen in their own form, but they, like the elk's horn, are becoming tin. These are found in tin-bearing rock. These crystals contain lime, and lime aids nearly every other substance in its formation. Every mine that differs much in parts and appearance should be shown on a different leaf. I believe the contents of rocks in productive districts do not vary much. They are sillicious strata, containing much the same contents: they will bear ore in any lode which has the right intersections, but they will not bear ore in straight continuous lodes, or in those with bad bearings and meetings of the rock formations. Then, I differ from most men as to the effects of lodes crossing each other. Every week remarks may be seen in the Journal that the lode is disordered by a cross lode or branches. That was said at the last meeting on the Prince of Wales Mine, when they advocated the driving of a level east to come in contact with the cross lode to find ore. I say that it is the crossing of lodes that produces ore. It is immaterial whether the ore makes home against the cross lode or 20 fms. from it; it was the two meeting produced the ore. The contents of the two lodes amalgamated when the first ore began to form, where the parts were most congenial to its formation. I know the Prince of Wales Mine, and worked in it 60 years since. I know what caused the ore to form there. Hingston Down, as a whole, is not congenial to the formation of copper.

I say no more here on these subjects, but turn again to England's paid scholastics, and enquire when they will produce the book I ask for, as I think I have shown that it has long been wanted.

Robin Hood Hotel, High Holborn. N. ENNOR.

[*To be continued in next week's Mining Journal.*]

MR. ENNOR'S REMARKS ON OPENING NEW MINES.

SIR,—I notice someone recently asked my opinion as to the best plan of opening out a surface mine. I thought I had recently given my opinion, by showing that all lodes in every sett should be first found by open trenching, or good pitting, before a shaft is decided on. Then, find every intersection, if any; if none, leave the sett for a future comer. If the lode looks well at or near an intersection, sink a long diagonal shaft on the most promising lode that would best command other lodes, if any; the first 10 fms. would give about the angle of dip, if it be a fair sized lode. Then, sink the shaft at the average angle, and care but little as to the lode varying; it is sure to be near the shaft. Keep your shaft down, I may say, by sights on the underside; the engine-rods and skips would then all work true and easy, if well fixed. There would be few or no cross-cuts to drive; if the shaft is fixed on the right lode it is often a cross-cut to others, and I am certain it will open out a mine quicker, and at far less expense, than a downright shaft. How many long cross-cuts have I seen that have taken as long to drive as the 10 fm. level did to sink? Then, it is far more safe for the men to work in a long diagonal shaft than in a perpendicular one. The engine-shaft is a safety for men, as a retreat in case of any accident happening. The skip may, in most cases, be brought to bottom. Wooden ladders may be kept down to within 20 feet of the bottom. I have always found that a diagonal shaft can be sunk cheapest, the lode opened cheaper, and that less timber is required for dividing and skip guides; in fact, I have long come to the conclusion that most lodes are to be opened quicker, at less expense, and with more safety for men, by diagonal shafts than by perpendicular ones. Consider the trouble of a shaft first perpendicular, and then having to be turned on the lode with angle-bobs. When a diagonal shaft is sunk on the lode 10 fms. you have open 30 fms. of ground on the lode. If you sink a perpendicular shaft 10 fms., with 10 fms. for cross-cuts, you see nor know nothing of the lode, and when cut it is often poor. How many mines have been stopped with not 6 ft. opened on the lode, which if sunk on the diagonal would have opened 30 fms. This might have cut a shoot of ore, and, I may say, might have saved the life of the mine? I may here remark I would sink no shaft on a mine over 30 fms. below adit, if I had not a paying lode; I would drive 100 fms. or more if required at that level, and prove the lode at that depth. If I knew of other intersections in the sett, I would see them first. If a mine 30 fms. below adit did not produce either good ore, gossan, zinc, or sulphur mundic in quantity, I would say stop, go elsewhere, and find a paying mine. I know many miners who have spent all the company's money digging down for a productive lode, but never found it.

I have heard a deal of lodes changing their underlie, but I never saw one that did; those that appear to do so are only offshoots and branches, and are ever trying to gain their original stock. Lodes are often turned by the crossing of other lodes, and one lode taken for another. A change of rock will sometimes twist a lode. These things do not often occur. I think inclines on many large lodes, when in good ore, might be worked to an advantage, carrying them through the best of the ore shoot, whether east or west. I say no more on this for the present, as your readers should bear in mind that it is shallow mines that pay. N. ENNOR.

MINING PROPHETS, AND MINING ENTERPRISE.

SIR,—In last week's Journal appeared some "jottings," traversing a very extended and very eventful period of Cornish mining enterprise; and pray allow me to express to "Truth," the "anonymous correspondent," my hearty thanks, for he reminds me of several too sanguine recognitions of "schemes" that have come to "grief." Had not the signature "Truth" been the emblem of my "Faith," and affixed to the letter, I should have left the anonymous correspondent ignored; remembering, however, that I do not believe in the infallibility of the Pope, nor do I practise his doctrines, I think that the general public will grant me the position that my prognostications on Cornish mining are not based on the security of Consols and Indian Stocks, and, therefore, may occasionally collapse.

I have read with instruction Mr. Nicholas Ennor's letters addressed to "Practicals," and I now address all these "Practicals," and your correspondent, "Truth," in particular, to point out Cornish mines discovered and introduced to the investing public for the years 1852 to 1873 inclusive that have paid back the money subscribed, with 5 per cent. interest. I believe the period referred to represents the usual term of a Cornish mining lease. If "Truth" will unshroud himself I will meet him with pleasure in discussing all grievances through your widely-spread and valuable columns. R. TREDINNICK.

London, Jan. 29.

ENGLISH MINING—PRESENT AND FUTURE.

SIR,—I have just received the result of the assays of 50 tons residues, after having been treated by the new process at Wheal Barnard, which is the crowning feature of success, since but a trace of copper can be detected, and only 1¼ oz. silver is left in the stuff; the ore originally contained 2½ per cent. copper and 8 ozs. silver, and I feel convinced that in the future, and with better appliances, hardly a grain of silver will evade us. Our neighbouring mine, the Prince of Wales, I perceive sold some ore at 5*s.* per ton, which is richer than the 80 tons we have treated the past four weeks, and from which we have derived an income of over 300*l.* From the Ticketings can also be gathered the fact that hundreds of tons of ore have not averaged more than 30*s.* per ton, a much lower price than the cost of coals, for 1 ton copper ore means 21 cwt. dry weight, and mine coals represent 20 cwt. with very considerable moisture. The total number of tons sold on the 22nd instant is 3847, and calculating only 6 ozs. per ton, we have 23,000 ozs. Silver, what becomes of it? I merely ask the question, and this unfolds another secret—that to produce 3847 tons, averaging 7 per cent. copper, at very least 50,000 tons lodey matter have to be turned over, containing 6 ozs. silver, or 300,000 ozs., apart from low-class copper, which takes its place in the world only to swell waste rubbish heaps. Look at the Devon Great Consols, where millions of ounces of silver have been wasted when the mining interest is groaning for success, and yet its representatives walk or drive about the country with not even so much as a blush upon their countenances. However, my little discussion this week refers to the New Great Consols, and I will at once enter upon the subject. Here we have a mine containing arsenic, tin, copper, and silver, a property that can at once return 100,000*l.* per annum. Such a statement requires to be proved by facts and figures, and nothing is more easy. I sincerely trust that the agents will receive my remarks in the same good spirit in which they are written. And now for real facts. The copper and silver are at present ignored, and only the arsenic and tin treated, by first stamping, and then removing the arsenic with the aid of revolving calciners, the tin being afterwards dressed in the ordinary manner. This is for my process radically wrong. Instead of stamping the ore, which is as hard as an anvil, size it down by Blake's stone breaker, and rough roast in kilns. I know there are none, but a mine of such magnitude can treat their erection as mere petty cash. The kilns are most important, as the ore by this method burns itself, and when removed is crisp, a great feature gained for the next process—the common Cornish crusher, and who would not rather crush than stamp 100 tons of stuff? Practical experience teaches us that the brass wirework should be twelve holes to the inch. From the crusher we pass to the revolving calciners, in which any arsenic remaining from the rough roasting is entirely removed, and after my patent process of extracting both silver and copper, this ore can be stamped with very light heads, so as to scour the salt from the tin, and obtain the last metal, which will have undergone such a cleansing process that it will take but very little washing before being ready for market. I will now blend figures with facts. Every ton of stuff in this mine is worth on an average 4*l.* for arsenic, copper, silver, and tin, and 100 tons can be treated per day, or 2400*l.* per week, just as easy as my talking about it, in fact, more so, for the doing of this work is a pleasure, whereas the talking about it amounts to a toil. My estimate is very much below the mark, as some of your correspondents say that the produce for tin is 1 cwt. 1 qr. per ton. If Capt. Pryor, and the other representatives of the mine, endorse such a statement I will believe it, but no faith, for good or bad, can ever be placed in the writings of anonymous scribblers. However, the arsenic, 1½ per cent. copper, and 6 ounces silver, with only 28 lbs. tin, are worth considerably over 4*l.* per ton, and I think facts will prove that the real average is 2 per cent. copper and 8 ozs. silver. So much the better, and as regards this tin, Capt. Pryor is the best judge. No one believed that the tin existed until he solved the problem, and it is quite clear that to return 20 tons per month 1600 tons must be stamped (saying nothing of waste) containing 28 lbs. to the ton. I publicly offer the hand of friendship to Capt. Pryor and the New Great Consols Company, and with a determined will it is even simple work for us to return 1000*l.* per day. What does it mean? Nothing but the treatment of some 200 to 250 tons per day, and Capt. Teague has won his success by operating upon an immense quantity of stuff not half so rich, or, at all events, he saves only the tin. Perhaps your readers will kindly note my present address. I shall be living upon the mine for the next few months, and with reference to the New Great Consols, Capt. Pryor can see the whole process at work at Wheal Barnard, the treatment of 3 tons per day of material less valuable than the produce of his own mine, with such favourable and profitable results that 100 tons instead of 3 tons, with extended and generally better appliances, must reveal such a prize that one and all will be only too happy to acknowledge that my efforts in the right direction have not been in vain, and mining generally will have the assistance required to save it from utter ruin. THOS. J. BARNARD.

Wheal Barnard, Harrowbarrow, St. Mellion, Cornwall, Jan. 28.

WHEAL BARNARD.

SIR,—Your regular correspondent, Mr. Barnard, writes with such earnestness that I was determined to pay his mine a visit, and having done so, in common fairness I can only say that a great number of his assertions which appear in print are really founded upon his favourite phrase, "facts and figures." That he brings poor unsaleable ores into rich products there is not the question of a doubt, and I think if some of our leading men were to judge him by his real worth, and if mining men, generally, were all to pull together, we should have a concentration of healthy, active, intelligent brains, and obtain a few more prizes in the lottery of mining. Mr. Barnard tells me that he is going to live upon the mine, and with his courteous, obliging disposition, and the really interesting process he has in operation, I think few visitors will regret a journey to the mine, and deny that a step is being made in the right direction. I am not such an adept at "facts and figures" as Mr. B., but a few common sense thoughts convince me that if his ideas had originated a quarter of a century back, when copper was dear, coals cheap, and capital to be had in abundance, he is just the sort of man to have kept mining alive, and made himself a millionaire. I believe that, even now, these are his present intentions, and he has my hearty good wishes, added to a little practical help.—*Jan.* 28. AN OLD SPECULATOR.

PARYS MOUNTAIN MINE.

SIR,—I have just seen a statement by the directors of this company congratulating the shareholders that through want of funds they will be compelled to issue the reserved 6000 shares. I would impress on the shareholders to well consider the great value this property may yet be to them, and to give the directors their support by subscribing for the shares which are left. My reason for doing so is obvious. The large amount which has been spent in developing this sett has placed them in a position (as the price of copper improves) to repay them well for waiting; and now is the time to anticipate, from the favourable reports of their agent at the mines, that with the additional outlay Parys Mountain will yet rank as one of the richest mines of the day. "It should be remembered that both coal and iron are becoming cheaper, which is of great importance to this property."

I would remind your readers that they have only to look at other mines where a small capital has been expended in excess of what was supposed to be required, and with what pleasure the result has been hailed by the shareholders. In writing these remarks I may mention I am not a shareholder (although a few of my friends are), but I have heard and read so much of the property that I should regret to see it go from the present proprietors. A careful perusal of the facts stated by the directors, and also the report of the manager which accompanies them, should convince all connected with the Parys Mountain of the great and rich property they possess.—*London, Jan.* 29. B. W. F.

WHEAL LUCY.

SIR,—I read in your valuable Journal of Jan. 24 the letter under the heading of "Mining Prophets, and Mining Enterprises." Among many other mines mentioned by "Truth," he also classed Wheal Lucy among those that have collapsed, without any prospects of making anything. Allow me to say, Sir, if "Truth" really knew the truth of how Wheal Lucy was stopped, and of the prospects of the concern, no doubt he would be of a far different opinion, and would direct his pen in another and better channel with regard to this mine. I do really believe, Sir, this mine would be a prize of no small value if properly developed and judiciously and economically managed, seeing that it is traversed with elvan courses, cross-courses, and with the lodes that have been so productive in the mines to the west of this mine. MINER.

LAST CHANCE AND TECOMA MINES.

SIR,—Regarding the above, I hope steps will be taken at forthcoming meetings to enforce the vendors to return part or all our money, when their promises, on the faith of which they got it, have not been fulfilled. Shareholders may not be aware that the shares of both companies are very scarce for delivery—*i.e.*, those who have sold them cannot get shareholders to sell them at present prices; and in order to get buyers to wait for delivery, they pay a backwardation every account; so that if shareholders would rather buy than sell, and enforce delivery, the prices would go very much higher, as they have the "Bear" sellers completely in their power, and such will continue to be, unless the shareholders enforce delivery, as the "Bears" know well that if they bought in to cover, prices would rise to three or four times what they are at present, and that is the reason they put off dealings; but I hope shareholders will force them to buy in. SCRUTATOR.

[For remainder of Original Correspondence, see to-day's Journal.]

MINES V. COALS.—Those who are interested in the price of this important item in mining costs would do well to note the fact that coal has been offered to one of the most extensive mines in the West at 9*s.* 6*d.* and 10*s.* 6*d.* a ton, to be shipped at Cardiff. Pursers and agents should constantly enquire after the lowest quotations, in the interest of adventurers.

THE CHINA-CLAY TRADE.—We are informed that never were the China-clay works in the neighbourhood of St. Austell and other parts of the country more prosperous than at present, and the prices realised are also better than they have ever before been. According to Messrs. Spencer and Co.'s circular, now before us, China-clay is quoted at a good price per ton.

CORNISH MINE SHARE MARKET.—The following are the closing prices:—Botallack, 64 to 65; just a few Carn Breas have changed hands at 55 to 56; Cook's Kitchens not much dealt in at 11½ to 12; Ding Dong, 8½ to 9½. A moderately large business has been done in Dolcoaths, which keep pretty firm at 50 to 51, in fact, instead of a reduction in price after the drop of tin, as might be reasonably expected, strange to say Dolcoaths went a little better. East Basset, 10 to 12; East Pool, 9 to 9½; East Lovells more enquired for at 9 to 10; Great Wheal Vor, 2¼ to 2½. Poirose shares are again in the market, and during the past week there have been several transactions at about 2*l.*; the mine is reported to be looking very promising. Providence, 8 to 9. Rosewall Hill shares have been a little dealt in at 14*s.* to 16*s.* A fair business has been done in South Carn Breas at 3 to 3¼, and they leave off tolerably firm. South Condurrow, 4½ to 5; South Crofty, 30 to 32, quiet; South Dolcoath, 2 to 2½. A few South Frances shares have changed hands at 13 to 13½. St. Ives Consols called 7 to 8. Tincrofts a little dealt in at 37½ to 38½. West Basset, 8½ to 9; a few transactions reported. West Chiverton, 5 to 5½. West Frances left rather quiet at 11 to 12. West Setons are in better demand at 32 to 33. West Tolgus a little firmer at 26 to 27. Wheal Agar, ⅞ to 1⅛; Wheal Basset called 24 to 26; Wheal Jane, 2½ to 2¾; Wheal Kitty (St. Agnes), 9 to 10, steady. Wheal Margaret, quiet, 2½ to 2¾. Wheal Setons are a little more enquired for at 16 to 18. Wheal Uny shares moderately dealt in at 3 to 3¼.—*West Briton.*

Meetings of Public Companies.

RICHMOND CONSOLIDATED MINING COMPANY.

An extraordinary general meeting of shareholders was held at the Cannon-street Hotel, on Wednesday—Mr. JNO. ELLIOTT in the chair—for the purpose of hearing from the Rev. Mr. Probert and Mr. Corrigan, who have recently returned from Eureka, the latest information as to the present condition and future prospects of the company.

The notice calling the meeting was read by Mr. T. W. HALL, the secretary.

The CHAIRMAN said they had heard the purpose for which the present meeting was called; it was that the shareholders might hear from the two gentlemen who had been for many months past more or less engaged in investigating the nature of the mine, full information as to the present condition and future prospects of the property. That information had already been sent to the shareholders; but as the shareholders had expressed a strong wish to hear the facts from the mouths of those two gentlemen, the directors had urged them to attend the meeting, and they had yielded to the wishes of the shareholders. The directors were especially anxious that the shareholders should hear from those two gentlemen the real facts as to the property for many reasons; not only would it relieve the directors from large personal responsibility, but also because it was very important in determining their future policy that they should know exactly the nature of the property, and the right mode of dealing with it. The concurrence of the shareholders had been obtained in every step taken hitherto, and the directors hoped to follow the same course in future. The directors considered themselves as trustees for the benefit of the shareholders, and they would not think of adopting any policy without first consulting the principal shareholders, and asking their advice in everything relating to the interests of the company. (Cheers). It was most important the shareholders should know whether the property was likely to be of a permanent character; because, if that were the case, the measures adopted in working it would be very different to those adopted if they were dealing with a small chamber of ore, or a transition mine, where they had to get out in a few months all the money which had been paid for the purchase of the mine. They had every reason, therefore, to believe that this was not a mere transition mine, because the latest results were so extremely satisfactory, and all pointed in that direction—to the permanence of the mine. (Cheers.) The sanction of the shareholders would be asked to the steps which it might be deemed necessary to follow. At the last meeting he brought the history of the mine down to the date of that meeting, and the predictions made at that meeting had since been literally fulfilled, and the directors had only that morning received a telegram announcing that the last two weeks' returns amounted to $53,000. Half of that should have been announced last week, but from some cause it was delayed. That, of course, was not equal to the average they had before, but the directors did not expect it. It was impossible to work in winter with the same degree of advantage as in summer; and, in fact, it was a moot point whether they should not shut down the furnaces, but they were getting the ore out so very quickly that it was necessary to smelt it, as each removal of ore cost 8l per ton. He might state that the directors had received intimation that the month's profits for December, taking the 75 per cent. upon which they were always calculated first before the actual return is obtained from the bullion dealers, the month's net profits amounted to 11,000l. in December. At the last meeting he predicted they would amount to 12,000l., and it was found that they generally ran 1000l. or 1500l. over the 75 per cent., therefore he had no doubt that the actual results would come within 100l. one way or another of that he had predicted. In the year up to December from March (when they really began working) they produced 5010 tons bullion, and smelted something like 30,000 tons ore to obtain it; that had resulted in a profit of considerably over 100,000l. Since the company began there had been divided amongst the shareholders $53,000, so the shareholders had received nearly one fifth of their capital back already, and, judging from the expressions which he had heard, the shareholders were very well satisfied with that result. (Cheers.) He might state, however, that the board were not satisfied with that result, and he would tell them why—the directors had found that the assay value of the ore was so much greater than the results, and they had been enquiring the cause of the deficiency. That deficiency amounted to a large sum, and it was a very serious consideration indeed—how best to meet this failure in the proper results. The directors had had the question before them for many months past. He drew Mr. Probert's attention to it in May last, and asked him to find out the reason. Mr. Probert devoted himself to that point with such great success that the recent returns had been greater in consequence of the suggestions which he had made, and the directors believed they were on the right road to make the returns still larger. The ore had assayed in bulk something like 37l per ton, but they had not produced profitable results of much more than 25l. One of the principal causes of the discrepancy had been that the ore was deficient in lead, which was required in smelting operations to bring the gold and silver away. There was only about 17 per cent. of lead at starting, and it required about 35 per cent. of lead to produce the full result. Mr. Probert pointed that out at an early stage of his sojourn, and said that the deficiency of lead must be supplied, or the company must lose, compared with what it ought to gain. The directors wrote out to Mr. Probert, asking him to look around the neighbourhood, and ascertain if there was any mine in the vicinity containing a larger proportion of lead which could be joined to this mine, so that instead of purchasing ore containing the proper quantity of lead the company could obtain it from their own property. In reply to a letter from the board, Mr. Probert suggested the purchase of a neighbouring mine, because the company's present mine would last much longer if it was supplied with smelting ore. The board had had several mines offered to them in the neighbourhood, but they as yet had taken no steps in the matter, but they had gathered information for future consideration, with the view of seeing how that difficulty could be obviated. He was happy to say that a cause was now in operation which might prevent the necessity of acquiring any other mine containing a larger quantity of lead, because by the latest advices from the mine the ore was getting so much richer in lead that the directors hoped to be able to do without purchasing. Mr. Corrigan brought home some specimens with him, and said that a great quantity of such ore existed in bunches, and had a much larger portion of lead as well as silver, which would add to the future richness and prosperity of the mine. (Hear, hear.) He (the Chairman) mentioned these circumstances because the directors had had two or three letters from shareholders who had got hold of two or three little circumstances about this matter, and had circulated charges against the board and against those two gentlemen who had been serving the shareholders in this disinterested way, and this was very painful to the board, because there was not an atom of truth in it as far as the board or these gentlemen generally were concerned. (Loud cheers.) He would tell them how the rumours arose. At the last meeting he pointed out the absurdity of some charges to the effect that the company had been paying dividends out of borrowed money—a charge for which there was not an atom of foundation. (Cheers.) They were pure inventions—with what object he would leave the shareholders to determine. (Hear, hear, and laughter.) At the last meeting he stated under what circumstances Mr. Probert was induced to go out. Mr. Probert was one of the earliest shareholders, and used to come to the office and ask particulars about the mine, being anxious to satisfy himself that everything was going on right. There came a time when the legal difficulty was hanging over the company, when Mr. Probert began to think there was something wrong. The board, therefore, took him into their confidence, told him the exact state of affairs; and knowing Mr. Probert's scientific attainments, and that he had leisure at his command, asked him to go out as a shareholder simply, in age for himself, decide on the spot as to the truth of the statements made, and to let the board know if there was anything wrong. Well, Mr. Probert went out, and he found when he got there that the mine was opening out in a wonderful manner; He watched it, and in the interests of the shareholders he remained on the mine for a very long time, the directors simply paying his expenses: indeed, he might state that Mr. Probert had only charged his actual expenses out of pocket. (Cheers.) This went on until a vacancy occurred on the board, and then the directors elected Mr. Probert a director. (Cheers.) Whilst Mr. Probert was out there he went over to San Francisco to make enquiries upon various points connected with the interests of the company; in fact, he had been the eyes of the board, giving them information without which they would have been perfectly at a loss. He hardly knew how to express the obligations which the board felt under to that gentleman for what he had done in that respect, and he was sure the shareholders would share that feeling. (Cheers.) Mr. Corrigan had also rendered the board essential service, and saved the company large sums of money in various ways, and had fully justified the confidence which the board had reposed in him from beginning to end. (Loud cheers.)

The Rev. Mr. PROBERT, who was loudly cheered on rising, said he conceived he almost owed the shareholders an apology for bringing them there on that occasion. It was with the greatest reluctance he consented to be the cause of bringing them together, because he thought the shareholders had gathered from the letters which he had written all the information he could give them; but several shareholders came to him and represented that it would be in the interests of the old and genuine shareholders if he gave information which might remove misapprehensions, and doubts, and suspicions, which rendered them at present the prey of designing and interested persons, who sent out circulars, paying the postage, and who printed them, no doubt, from motives of pure benevolence. (Laughter and Cheers.) But he could not believe that the shareholders were to be moved by any such proceedings. No doubt there were some affected by it, but such shareholders were the very stock-in-trade of such persons as those to whom he had alluded. (Hear, hear.) He was sorry he had no means of exhibiting on a large scale something like the contour of Ruby Hill, but he had a tracing of the chief claims on Ruby Hill. The hill was a spur of Prospect Mountain, and on the top of the hill was the celebrated Look-Out shaft. On one side of the shaft was the entrance into the old Richmond Mine, and on the other side was the present entrance to the Lizette tunnel, out of which the ore was brought, and another shaft was being put down. The whole ground extended about 1200 ft. down to the northern end, and whatever ore was found between the two points on the crossing the company had a perfect right to follow to any depth between the ends of the line. The mining laws of the United States gave the company the right to follow the ore to any depth, and, therefore, it did not matter what claims there might be on that side, this company could go under the claims to make out the whole lode. The great lode on Ruby Hill, commencing on the Tiptop ground, took a curve through the Richmond ground, and came into the Eureka ground through the Champion claim, and proceeded regularly for about three-quarters of a mile. The ore was not diffused throughout the whole extent of the lode, which was a good thing, because if the ore were diffused through the whole distance it would probably not be worth touching, for they could not work it in that country; but, fortunately, it was concentrated in a "shoot," or "chimney," or "pipe" as it would be called in this country, about 100 or 150 ft. wide on the average, between 40 and 50 ft. thick, and 600 ft. from the "crop" to the present working. If they would take the trouble to calculate the solid contents of that they would find it would be enough to occupy them a long time; the ore being so concentrated enabled it to be worked at a smaller cost than if more diffused, and the natural position and contour of the hill afforded great facilities for opening up the mine and working the ore. (Cheers.) As yet they had not found any water in the mine; it was perfectly dry ground, and they might expect to go down a further 300 ft. without finding any water. The ore was friable and easily broken, and by means of levels was easily run out in cars at a moderate cost. It was a shoot, or pipe, of ore pitching down at about 60° to the horizon; they had followed it from the outcrop steadily down, never losing it, and never finding it less than 100 ft. lateral extension, and they had got it down 600 ft. from the incline. Since August the Rossiter incline had been put down from the level of the Lizette tunnel, and it had been carried down 300 feet; and he believed, without any exaggeration, that the reserves were more than doubled by these discoveries within that period. (Loud cheers.) Whilst referring to Ruby Hill, he might mention a fact with respect to the title which might, perhaps, comfort them with respect to the present position of the company. The company had a United States patent for the Richmond ground, and also for the Tiptop ground; the Tiptop ground was a continuation of the Richmond for about 1200 ft., and whatever "croppings" they had they had a right to follow. It did not matter who had claims on the surface; at the same time this company had purchased the claims (to make assurance doubly sure) which seemed to give a foothold for any person attacking the company in future. (Loud cheers.) He therefore, did not see that there was much to fear from this black-mail system—from these attacks of unscrupulous men; they had first the patents to protect them, and their next source of security was the strength of the company. Those gentry to whom he had referred did not attack the strong, and it was the belief that this company was short of funds which encouraged them in their first attack. Everything had been done which could be done to secure to the company the peaceful possession of the property in future. (Loud cheers.) He left London for the mine, feeling a good deal of anxious suspense, for he had introduced a good many personal friends into the company, and he felt in duty bound to go out and tell them the truth. (Cheers.) If he had been disappointed, and found the thing not worth the trouble of working, he should at once have said so. He and Mr. Corrigan, as soon as possible after their arrival, went through the mine, and he had not been in two hours before he saw that they possessed something extraordinary. There was in sight what he believed would represent the purchase-money of the mine; the lowest estimate he could put it at was 40,000 or 50,000 tons of ore. (Hear, hear.) Mr. Clarence King was called upon to report upon the mine, and he put it at a larger amount; at a later period Professor Price, at the request of Mr. Corrigan, reported upon the mine, and put the quantity of ore at even a higher estimate. Since then the Rossiter incline had been opened. The Rossiter incline was down 300 feet, it commenced at the level of the Lisette tunnel, which was about 400 feet from the entrance of the old Richmond Mine. Well, 300 feet deep, by 100 feet lateral extension, by 40 feet thick, gave a total of 1,200,000 cubic feet, which, reduced to tons, would be about 80,000 tons, and taking off 25 per cent. for loss and waste, would leave 60,000 tons, and that at 4l. per ton profit, would amount to 240,000l. as a minimum. (Cheers.) He believed many would put it much higher, but he gave them a fair estimate. Those were the new discoveries. Besides that, there was the balance of former reserves over the 30,000 tons extracted, and there was thus a large mass of ore to be added, so that they might feel pretty comfortable. (Cheers.) He would endeavour to describe the nature and appearance of the ore as they went down through the bed. The explorations originally had been made in a most unscientific manner; the ore had been "plunged" into, and drifts had been put out right and left to see what they could get to feed the monster furnaces, which were more like iron blast-furnaces than anything else. The ore had a general appearance of reddish-grey rust-coloured earth; it was soft and friable for the most part, and might be divided into three layers or zones of different kinds of ore. The first, which lay towards the top, carried a high percentage of gold, with a little lead, and some silver. That ore could not be worked by itself; it had too much lead to work as milling ore, and too little for smelting. A little lower down they came to the middle region of the ore shoot, and there they found a rich heavy carbonate of lead, varying from a light yellow to a dark-grey. These were seen in streaks. The next region consisted chiefly of a more compact solid ore, in which large lumps, or nodules, of argentiferous galena were embedded. That galena contained a large amount of silver; he had seen it assay 400 ozs. to the ton, but the average was 150 ozs. Mixed up with it was a large amount of pure iron ore. He would endeavour to give some idea of the value of these three kinds. The first had assayed frequently in his own hands 5 and 6 ozs. of gold per ton of ore, and one assay, made most carefully by a competent gentleman at San Francisco, had yielded 10 ozs. to the ton. Of course, this assay was exceptionally high, but still, if they came to the working through nine months the gold had averaged 1¼ oz. per ton of ore, without mentioning the silver or lead. Coming down to the middle region, where the carbonates of lead were chiefly found, they had a better tenure in silver, and a moderate tenure of gold, whilst they carried a sufficiency of lead almost to smelt the upper layer; in some portions there was really sufficient lead to supply the upper poor dry portion of the vein. (Cheers.) The tenure of silver was from 150 to 200 ozs.; gold varied from 1 to 3 ozs. They next came to the lowest portion of all—galena mixed with iron; the iron they left out, but the galena taken by itself averaged an assay of 8150; this was rich argentiferous galena. On the first examination of the mine he had had to ascertain correctly the value of the different kinds of ore. He had already told the meeting what the approximate value was, but the shareholders would be very much misled if they thought that all the ore taken out would assay like this; representative specimens of the different kinds of ore had to be taken out first. This had not been done in a proper manner, and it, therefore, became necessary to have a more certain method of ascertaining the value of the ore. While the lawsuit was going on it had been found to be impossible to assay on a large scale, but in March, when the furnaces commenced running, a regular system of sampling had been adopted. The ore was put into the furnaces in a certain quantity five or six times during the hour, and for each charge a shovelful of ore was set aside. This operation was carried on throughout the day, and at the close of the day or the next morning the accumulation was taken, well mixed, a portion crushed and dried, and then divided into three equal portions and sent to three different and independent assayers. (Hear, hear.) Beyond that, samples had been taken to the office, of which he had made a check assay. This system had been carried on from the beginning of his visit, and was still going forward, and a correct representation of the assays had been forwarded to the company in London. He had himself carefully checked and examined all the assays, and he felt confident that an accurate and safe basis of calculation had been arrived at for the future. It had been ascertained what the loss amounted to in smelting, and the shareholders might look forward to an improvement in that respect, as methods would be adopted which would ensure such an improvement. (Applause.) The result of nine months actual assaying, taken each week and each month, that there might not be any possibility of a mistake, were these:—Silver per ton $32; gold per ton $24, and lead $20; making a total of $76 per ton, on a monthly average, whereas Mr. King put the average at $40. From this $76 per ton about 10 per cent. would have to be allowed for moisture, so that $70 would about represent the value of the ore per ton on leaving the mine. This had been taken out mixed together, good and bad, during the whole of the nine months, and the result had been $70 per ton. (Cheers.) Now as to the yield. The same system had to be carried out with regard to the produce of the furnace—the lead carrying silver and gold—as with the ore. Every bar of lead run out had to be clipped top and bottom, and these clippings had to be well mixed together, and divided into three lots, each lot being sent to a different assayer. When the returns agreed they were satisfied, but when they did not a fresh assay had to be made, so that the returns might be perfectly correct. Great difficulties had for a long period of time been experienced in getting at the true value, and in one case they had a loss on 12 shipments or carloads, amounting to $3000; but, ultimately, the purchasers were satisfied that the assays made by this company were correct, and handed over the money. The yield during the nine months had been $52 per ton out of 70, so that it took 5⅔ tons of ore to make 1 ton of bullion, showing that $18 per ton was lost in smelting, amounting to no less than 26 per cent., or over one-fourth of the whole contents of the mine. Well, the results were magnificent; nevertheless, they had obtained $52 actual yield when the ore had been estimated at $40. These assays had been corroborated by the actual returns, so that there was no longer any doubt as to the correctness of the assays. (Hear, hear.) The bullion had been turned into cash, and they knew exactly what they could make out of the Richmond Mine. He would give certain comparisons with other mines, that the shareholders might see the value of their own property, for he could assure them that they did not know what they had got hold of. The result of the working since March last has given a profit of, speaking in round numbers, 120,000l. (Loud cheers.) That would be upon the smelting of 32,000 tons of ore, or an average 3l. 10s. per ton net profit, which he thought ought to satisfy any reasonable person. (Hear, hear.) Now, it is not fair to the mine, or doing justice to the property, to take these nine months as a criterion of what could and should be done with the property, for during the month of April they had been working under great difficulties, and in March they had only had one furnace, and in May they had only had two furnaces of their own, the third furnace being a hired one, and the working of that had been unsatisfactory. The profits would have been doubled if they had had their own furnaces entirely. He would now take the three months of Sept., October, and November, during which time their own furnaces had been running steadily, and had smelted 11,000 tons of ore. The net profits during that time were 45,000l., or 4l. per ton profit on the ore. (Cheers.) This would give an idea of what could be done with the ore and their present establishment of three furnaces. He believed that the profit could be still further raised even to 5l. per ton, estimating, as he did, that the ore would continue of the same grade, and with improved working in every department. (Hear, hear.) The produce of ten months' working (he could not take the whole year, as they might not be able to work the whole year) would be 600,000 ozs. of silver and 30,000 ozs. of gold, or a total value of $1,300,000. He would institute a comparison between the produce of the Richmond Mine and the produce of some well-known mines of the Old World. The shareholders had, doubtless, heard of the mines at Freiberg, in Saxony, which had been worked for centuries. Again, the Hartz Mountains were famous for silver-producing veins, and had been worked for three centuries and a half. The produce of silver from the Upper Hartz had been, according to the last return, three or four years ago, an annual total from the whole of the mines of 330,000 ozs., which was a little more than half the produce of the Richmond Mine alone. The Freiberg Mines, which were larger, and were more largely worked than those of the Hartz, gave an annual total return of 900,000 ozs., showing that the total returns of the Richmond Mine in silver and gold exceed the returns of silver from the Hartz and Freiberg districts together. This would give some rough notion of the enormous produce of their mine during the last few months working. They had $24 of gold per ton in the Richmond Mine, and in California a gold quartz mine was considered to be a very good one if it gave $10 per ton of ore, and very rich indeed if it gave $20, and all paid good dividends on that amount, therefore this company had a gold mine fused as it were into their silver-lead mine of which they knew nothing. He would give another illustration of the value of their mine. In the Empire of Brazil the Morro Velho, owned by an English company, the St. John del Rey, a most prosperous institution until their timbers caught fire a few years ago, and the mine fell in: he believed they would be as prosperous again. This mine for 15 years had returned 50,000l. per annum on a capital of less than 150,000l., and the yield from that mine was 8s of gold per ton, or just one-third of what has been obtained in the Richmond Mine. If time admitted he could further show the value of their property by comparison with other well-known properties; but they had to consider the present position and future prospects of the mine. He had endeavoured to give some idea of the present position of the mine; he would now discuss its future prospects. No doubt the uppermost thought in the minds of the shareholders was whether the mine would or would not be permanent. This was only one aspect of the future, for besides that there was the probability of discoveries laterally north and south; and there was a third, and not less important question, and that was as to the results which might be expected from working the present reserves in the future. The permanency had to be determined by indications and analogies drawn from other mines. It was not every man who could read these indications—(hear, hear)—and he could not pretend to do it. It was a common saying that one man could see as far into a millstone as another, and he believed this until he came into contact with Mr. Clarence King, who had altered that opinion. Mr. King was an honourable gentlemen in the old English sense of the term, whose opinion the shareholders might rely upon. (Hear, hear.) His training was, he believed, at Yale College, where he distinguished himself very highly. At twenty two years of age he was appointed to direct the great geological and mineralogical survey of the Fortieth Parallel from the Rocky Mountain westward. During nine years he was at the head of the Government expedition, with a staff of competent scientific men under him. It was his duty to visit every mine in the region and report to the Government upon them. His reports form most valuable additions to mining statistics on the subjects. This gentleman having great natural abilities, and exceptional opportunities, was a competent person to call in to give information on the mine. Their suit at Eureka depended mainly on this—whether the Richmond Mine was a lode or a deposit. He could not reproduce the evidence given by Mr. King at that time; all he could say was that his reasoning was so cogent and conclusive on the subject, that after he left the court no person in Eureka believed in deposits. He settled that great question, whether it was a lode or a deposit, so that their opponents were completely out of court. His reasoning had been briefly this—Every mass of mineral matter was put into the earth in one of three ways; either from the sky, or from below through a fissure in the earth, or the third alternative was that it might have come out of some mountain top, and had run down into a hollow. The first theory about its coming from the sky might be dismissed at once, leaving two causes to be decided between by mining experts who had made mineralogy their study, and Mr. King came to the conclusion that the ore had been crystallised in such a manner as would have been impossible if it had fallen down a mountain and filled a hole. He would not attempt to reproduce the whole of Mr. King's argument, but it decided the case on its merits, and for his own part he (Mr. Probert) was satisfied with the opinion. Mr. King fully believed in the permanency in depth of the Richmond Mine, and that was all that was required. His last remark before he (Mr. Probert) left was this "That mighty torrent of lead must have come from below," and he believed this, and that the mine would be a permanent one. There was one indication in the mine which he (Mr. Probert) could read—it was a mineralogical one. They had a quantity of what was commonly called mispickel, a compound of sulphur, arsenic, and iron—arsenical pyrites. This was remarkable in the Richmond Mine, for the more arsenic they had the more gold they got; and he could tell from the furnaces when there was a large amount of gold in the ore, from the unpleasant smell of the arsenic. He could not but accept this as an augury of the future permanence of their mine, for if you went to South or Central America, where the greater part of the silver mines were found, this substance was invariably present, and it was almost a maxim that if you have no pyrites, you have no silver or gold, and this held in the present instance. Some objections had been offered as to the permanency of a mine in a limestone formation, and the Ruby Hill was very much of this description. It had been made an objection by some persons, and he had seen it currently stated in mining papers that limestone formations were the scene of deposits, and not of true veins. Nothing was further from the truth, as proved by some of the mines in South America notably that of Cerro de Pasco, in Peru, as well as in Central America. From everything he had seen he was bound to draw the conclusion that there was every reason to expect that the Richmond Mine would be permanent in depth, and, having a considerable stake in the concern, he was very well contented with it. (Applause.) As to the future explorations, it was very probable that other shoots of ore would be found, and this was the conviction of Mr. Clarence King, expressed again and again. Explorations would have to be made during the year with the view of discovering new shoots of ore. He had another very important branch of the subject to deal with. The past year's operations were not altogether satisfactory, the Richmond Company having been working since the commencement under the immense disadvantage of an insufficient working capital. It would want at least 50,000l. to carry on the operations of this company properly. The pittance of 20,000l., originally set aside, was at once absorbed; he did not know exactly how, but it was not working capital now, small as the amount was. The enormous sum of 200,000l. paid for the property had all been "gobbled up" by the gentlemen who brought the company out, and they were responsible for launching the company and leaving it to starve for want of working capital and pledging the bullion before it was out of the furnace. He said it deliberately, and would not retract his remarks, that they alone were responsible for starving the mine and working it in the wasteful manner in which it had been carried on. Advances had to be obtained on the bullion, and their resources drawn upon in order to provide the agents with running capital for the payment of wages. Sums had also to be borrowed at heavy rates of interest during the whole time. Under such circumstances the property could not be worked intelligently, or to the best advantage. The policy should be to make as much as possible out of every ton of ore in the mine by the best system of reduction. The mine owed the shareholders a large sum of money; they had received in dividends one-fifth of the capital, but it owed 200,000l. and interest before they could really enjoy anything like profit; until the purchase-money was returned they had no real profit. During the past year they had been working out their reserves too fast, and at the minimum of profit. Mr. King had suggested to Mr. Corrigan and himself that the works should be stopped for six months, and Mr. King would have done that if he had become manager; but this suggestion could not be listened to, and they were obliged to go on "rushing," and, consequently, wasting their property. The thing had not been properly understood by the shareholders, whose questions had been regarding the number of furnaces and the amount of ore smelted; the question should have been as to the profit made. In a lead mine smelting at a high temperature, which meant sending out from the furnace shaft a large portion of lead, and with it silver and gold, was smelting at a loss, for lead could not be smelted very rapidly without great loss, so that the policy should be to smelt fewer tons of ore at larger profits per ton—and not to have such immense quantities smelted as had been insisted upon. However, as it was they had done very well, and might congratulate each other on the results. (Hear, hear.) A further large saving might be effected by a better system of taking the ore out of the mine, and by a closer assortment of it before it reached the furnace. They had three different zones of ore, but a large portion of it should not be smelted at all; it was poor, hungry stuff, containing hardly any silver or gold, and it robbed the richer ore of its share in the furnaces, running out nothing but slag. There was a quarter of a million dollars in that slag heap, which it would not pay the company to touch; but they would have to try and save what they could in the furnaces, and not deal with it afterwards; the value of the slag heap showed the necessity for very careful smelting. Great loss had also been experienced from the dust which was blown out of the furnaces, injuring the health of the men and getting into their eyes; but before he came away a long flue had been planned which would save this dust, so that an additional economy would thereby be effected. The next point was an economy to be effected in the sale of their produce. Their produce was now sent to San Francisco, from whence the agent there had to remit the greater portion to New York, the great emporium for lead. Why should it not be sent to New York direct? Their agent at San Francisco was a worthy gentleman, who only got his 12 per cent., which he got from everybody else; but this was not the fault of the people out there, but of the promoters of the company for starving it for want of working capital. He wished to observe here that their agent, Mr. Daniel Meyer, was a man of great honour and integrity, and he deserved a high tribute for his honourable character. (Hear, hear.) The company owed him a deep debt of gratitude, for he was a large creditor of the company at a very critical time; but, fortunately for the company, did not press his claim, but said he would take a "back seat," and let the small creditors be paid, and either sink or swim with the company. (Cheers.) If any man should derive a benefit from the company it was undoubtedly Mr. Meyer, but the necessity no longer existed, and when they parted the company and Mr. Meyer would part friends. He thought the company should have their own refining works at Eureka, as he considered they would derive great benefit from the establishment of such works on the property of the company. This question had been brought before the board, who would have to decide upon it, but they would like to have an opinion from the shareholders on the subject. If they had these works now at Eureka they would be able to separate the silver and gold from the lead in ten days or a fortnight at most, and send it away express to New York, San Francisco, or even to London, and get the money lodged in the bank. They had at present to wait three months before it could be realised in New York. This would be a great advantage, as they would have immediate command of two-thirds of the produce, which would dispense with the necessity of borrowing, besides a great saving of time. Another advantage of primary importance was that the oxide of lead or litharge produced in refining would then be of great service, instead of being troublesome as it was to some refiners. In April last they had only had dry ore to put through the furnaces, which was deficient in lead, only having a percentage of about 16 or 17 of lead, the consequence being they had lost 23 per cent. of silver and gold throughout the month. In June, when they had a better supply of lead, the loss in silver and gold was reduced to 14 per cent. He would not bring any further matters of detail before the meeting, but he would remind the shareholders that changes and improvements would cost money, and where was it to come from? He thought the capital large enough already, and would be the last to urge an increase of it. (Hear, hear.) He did not wish the capital to be increased, and he thought these expenses should come out of the earnings, and let the shareholders for a short time be content with less dividends, in order that a portion of the profits should be devoted to these improvements. The only thing remaining for him to do was to bear testimony to the valuable services of his colleague at Eureka—Mr. Corrigan. (Cheers.) His services had not been fully appreciated, as his position was not understood, but he could assure the shareholders that Mr. Corrigan had had a very difficult task to perform, for he was the only person there who understood the situation at the time of the lawsuit, and he had acted upon his own responsibility in compromising the suit. He was here to-day to answer for his sins, but he did not think the shareholders would deal very harshly with him. (Cheers.) After thanking the meeting for the patience and attention with which they had listened to his remarks, Mr. Probert sat down amidst long and continued cheering.

The CHAIRMAN said Mr. Probert had referred to the dividend. Very long discussions had taken place, but as the board had all the accounts before them, and they said that the company was accumulating capital out of the earnings, they thought they were justified in dividing a portion of the profits among the shareholders. About 18,000 lbs. of bullion had since been sold at a very fair price, which left them a good sum in hand accumulated out of earnings. (Hear, hear.) Respecting the insufficiency of capital he thought they had got over that difficulty by very great exertion. He considered the suggestion to delay a full dividend until the end of the year a very good one, and he had no doubt that the dividend would be quite made up then. The returns for the past two months were not equal to the profits, but it was thought best to keep the furnaces going. Mr. Probert had told the meeting of the improvements which had been made, but he had not mentioned the fact that many of these improvements were his own, especially the flue, which would doubtless prove of such great advantage. (Cheers.) He called on Mr. Corrigan to give an idea of what he had found in the mine.

Mr. CORRIGAN, who on rising was received with loud cheers, said after the lucid manner in which Mr. Probert had described their property, giving them the past of it, the present, and its future, he thought he could do very little justice in occupying much more of the shareholders' time. He would say, however, that he was one of the first shareholders in the company. He had entered into it as a speculation or an investment, and he had been associated with it from that time to the present. There might have been a few weeks that he had been desirous to get away from the company: he would not attempt to deny it, as his enemies had circulated the fact largely. Those persons might be perfectly right in saying what they had done, and he had an equal right to find fault with them. A short time after the organisation of the company he had been called upon to go on to the board; this was after the property had been received. Having been on the board but a very few weeks he saw there was trouble ahead, and, being an old Californian, and a member of the board, he had been pitched upon to go out and see what the matter was. He did so at the request of the board, and he had a great deal of trouble, which he would not occupy the time of the shareholders by recapitulating. Enough for him to say that when he got there he found that the company had paid far too dear for the property. At that time he was the largest shareholder in the company, excepting the vendors, and, therefore, he considered that he had a perfect right to give his opinion on the property, and he did so without fear. The vendors of that property were his friends, one of whom he had accompanied to the property. This friend had asked his candid opinion what he thought of the property, and he as candidly replied that he thought the Richmond Company had been badly sold. This visit had caused a great deal of unpleasantness, and when he returned to England he had been anxious to get rid of the Richmond Company's affairs. He had quarrelled with one with whom he had been on the most intimate terms, but as this friend disputed his opinion he could do nothing more. He said nothing then against his friend, nor did he now, and he would not retract a word.

Whether his opinion was worth anything or not those who had visited the property would be able to say. On his first visit to Eureka he foresaw legal troubles would probably arise, and this had come right, but he had not considered it policy to lay the matter before the shareholders at that time. Previous to his second visit he had made up his mind to go to the Pacific Coast on his own business, and to remain there for some time. He went out to look after his own affairs, and attend to them; and he said to the directors that if they would send someone with him who could stay at Eureka, and go thoroughly into the business, and inform the directors what was the true position, he (Mr. Corrigan) would do the next best thing—he would go to Eureka with that gentleman and look into the case, and give his views upon it; but, at the same time, he would send in his resignation as a director of their board. Great fault had been found with him for his conduct in this case; some said he had deserted the ship, and a great many other things which he knew or cared very little about. However, he did send in his resignation; but in a few weeks, during which time he had employed the best counsel that it was possible to obtain, as well as the best experts, as he was determined that nothing should be left undone that could in the interests of the company have been done, he withdrew his resignation by cable, as he was very much afraid that the Richmond Company were going to lose the property. In withdrawing his resignation he did an injustice to himself and his private interests, but he did not want the company to lose the property if he could be the means of preventing it. (Cheers.) He (Mr. Corrigan) would make one observation with regard to their enemies in the lawsuit, for there seemed to be an idea that the enemy was a blackmailer, but this impression was a very false one. The Eureka Consolidated Mining Company of San Francisco believed they had as good a claim to the property in dispute as the Richmond Company, and went into it with the honest intention of fighting it out—as they did—unfortunately for them, getting the worst of it. He merely said this to remove an impression that they had been attacked by thieves and rascals; he could publicly tell them that such was not the case. (Hear, hear.) He did not believe that more honourable men existed than the board of that company. He had represented this company at Eureka ever since its formation, with the exception of a few weeks, and he still continued to represent the company there. (Loud cheers.) In the lawsuit he had gone in for the benefit of the Richmond Mining Company, with the intention of winning, if possible, fearing neither friends nor foes, and he had won—fortunately for them. (Loud cheers.) The property on his last visit (four weeks ago) was looking better than ever, and with greater evidence of its permanency. He did not exaggerate the case or take a too sanguine view of it; he had been connected with mining too long to be caught in any such trap. The property had greatly improved in the past few months. With regard to the management of the property, the board in London had had a serious time of it, as he could say truly for himself, far more serious than he had perhaps got credit for; however, he had done everything on the property which he thought would be to the interest of the company. (Hear, hear.) He had undertaken the superintendence of the property, and he would superintend it to the best of his ability. He quite corroborated Mr. Probert's remarks as to the way in which the property has been rushed during the past year, and this had been rendered necessary by various circumstances. Respecting the dividend, he thought it was a very dry thing for shareholders in London to invest 200,000*l.* or 300,000*l.* in a property, and have it drag on for two years without a dividend; such, unfortunately, was too frequently the case; he thought the shareholders should have a dividend as soon as one could be safely paid. The company was greatly indebted to Mr. Probert for the pains he had taken in the matter, and he fully concurred with that gentleman in his suggestions for the future management of the property. (Applause.) It had been suggested that he (Mr. Corrigan) had some properties which he wished to dispose of to the company, or to "palm off" on them; he wished it to be clearly understood that the gentlemen who had made these suggestions had been entirely misinformed. He very much regretted that such reports should have been circulated, for both Mr. Probert and himself always endeavoured to keep everything straightforward and above water. (Applause.) These reports might have been circulated for the purpose of getting the shares into the ring, for "bulling" and "bearing" purposes; however, he would do his duty, and did not care what followed. Some of the shareholders had had private agents at Eureka to keep them "posted" with all that was going on. Fearing it was some of the employees, he endeavoured to ascertain if such was the case, but, feeling confident that it was not, he was perfectly satisfied. Having expressed his full belief in the further development and future prospects of the mine Mr. Corrigan concluded with the hope that his remarks had not given offence to anyone. (Cheers.)

The CHAIRMAN explained, in reference to Mr. Corregan's remarks, that they referred to a period when the right of the company to follow its lode was disputed by the Eureka Company. The board informed themselves at an early date that the laws of Nevada gave this right, and the result had confirmed their opinion. When the blackmailing attack was made in connection with the Tiptop claims that was quite another thing, and the vendors met that difficulty by surrendering 2000 shares then standing in the market at 7*l.* 10*s.* The vendors subsequently came forward and subscribed a large portion of the additional capital, which was the means of saving them; and Mr. English, at a most critical period during the recent suit, advanced the company 6000*l.* The board desired to do justice to all, and it must not be forgotten that what they originally bought was the Richmond lode, which they had established the right to follow; and it was that lode which was the source of their present prosperity. It was true the company still owed 16,000*l.*, but they had profits in hand of 30,000*l.*, and they had, moreover, out of profits paid off 16,000*l.* during the past few months.

Mr. HOPKINS thought the meeting was drifting into a too serious, or even melancholy, mood. There was no doubt that Mr. Probert was a valuable addition to the board, as was also Mr. Corrigan, who had had a very difficult task to perform. He held the same opinion as the Chairman respecting the dividend.

Mr. APPLEGARTH asked whether the present capital was insufficient to carry on the work profitably?

The CHAIRMAN replied that the present working capital was ample to realise a good dividend, but nothing like what it would be if they had more ready money.

A discussion then ensued as to whether the capital should be raised by debentures, or by deferred dividends, and Mr. Corrigan explained to the meeting that no additional capital would be required, as the mine was fully able to furnish the necessary funds from the monthly earnings as the improvements progressed, without materially diminishing the dividends. Unanimous votes of thanks were passed to Messrs. Probert and Corrigan for their visits to Eureka, and the interesting speeches which they had just made. A similar compliment was paid to the Chairman and directors, and the CHAIRMAN in replying said that Mr. Probert was going out to Eureka again as a director, after he had spent a few weeks in finding out the best refining apparatus to be adopted at the mine. For this purpose he would have to visit several places in England and on the Continent.

The meeting then ended.

ECLIPSE GOLD MINING COMPANY.

A special general meeting of shareholders and contributories was held, by direction of the liquidators, at the London Tavern, on Tuesday, Mr. WILLETT in the chair.

Mr. J. W. SYKES (solicitor to the liquidators) read the notice convening the meeting. The report of the liquidators (referred to in last week's Journal) was taken as read.

The CHAIRMAN said that when the liquidators first took possession of what remained of this unfortunate company, the balance at the bankers amounted to 160*l.* 19*s.* 8*d.*, while there were creditors to the extent of 1000*l.*, so that there was good reason to be satisfied that the liquidators had not only not made calls upon the new shares, but that there was a balance of 2500*l.* to be divided among the shareholders. This included the amount paid by Mr. Henry Haymen in compromise of the company's claim against him. Having referred to the items in the balance sheet, he stated the liquidators had had to deal leniently with some of the contributories, and that the only thing now was to decide as to who the balance was to be divided amongst, that is to say, which class of shareholders, numbering together between 700 and 800. As liquidators they declined to take any responsibility in the matter, and had obtained the opinion of counsel, who advised that the point was one which should be decided by the Court, the result of which would be shortly known. Most of the holders of the old shares, however, had taken new ones. He then moved that the report of the liquidators and the accounts be received and adopted.—Mr. ATTRILL seconded the proposition.

Mr. SYKES explained that the question before the court was, which class of shares were entitled to the surplus capital, whether the old or new shares, or both.

Mr. T. G. TAYLOR thought they were entitled to some further explanation with reference to the compromise that had been made with Mr. Haymen.

Mr. SYKES said a meeting was held last June to consider the case of compromise with Mr. Haymen, and it was through that compromise that the surplus capital had been obtained.

The CHAIRMAN said he had received several letters concerning Mr. H. Haymen.

Mr. TAYLOR said it was known full well that Mr. Haymen was really the representative of a syndicate, and might be called Haymen, Dawson, and Co., and that the shareholders were the victims of their cupidity: and then there was a relationship between the secretary (Mr. Bluett) and the Chairman, and some one in the Stock Exchange. He thought the liquidators might give the meeting some information to guide them hereafter.

The CHAIRMAN said he believed he was one of the largest losers in this company, and assured the meeting that every step was taken before the compromise was accepted on behalf of Mr. Haymen. He (the Chairman) did not believe that one farthing of the amount came out of Mr. Haymen's pocket, nor did he believe Mr. Haymen was worth a penny piece.

Mr. SYKES said that at a special meeting in June last it was unanimously resolved that it would be wise and expedient to compromise with Mr. Haymen, after every process known to lawyers had been taken against him; the result was the liquidators obtained 3500*l.* Mr. Haymen's property at Sandgate, which was mortgaged to the Imperial Bank for more than its worth, had been offered for sale, but would not realise the amount of the mortgage.

Mr. ATTRILL said this compromise was really equal to 4500*l.*, for they undertook to pay the solicitors' bill amounting to 300*l.*, gave up the claim for directors' fees, and also any participation in the assets.

Mr. CASWELL did not think it worth while to spend words about Mr. Haymen. The liquidators certainly deserved the best thanks of the shareholders, but let them all be done for ever with Mr. Haymen.

The resolution was put and carried unanimously.

The CHAIRMAN said as the formal business of the meeting had been disposed of, he wished to state that some of the largest shareholders were not going to lose their stake in this property without a strong effort to recover it. There were 700 or 800 shareholders, and his object was that every shareholder should know all he knew. He did not advise any course of proceeding, but submitted the information that had come to his knowledge. He then gave a *resumé* of the history of the management of the mine, stating that the collapse of the company was traceable to the utter carelessness displayed by the directors, but he did not charge them with speculating in the shares on the Stock Exchange. The late directors believed the sole cause of the failure of the company was due to the appointment of Capt. Barratt, who utterly deceived the board. There was not a property in California equal to the Eclipse, and yet nothing had been done to develope its resources when Captain Barratt resigned. Mr. Tregellas was appointed, and he was killed by the earthquake. It seems that Mr. Tregellas was utterly unfitted for his post, although, no doubt, he worked hard, and did his best for the company. While all this was going on the company was without a title or patent, although the directors had paid 60,000*l.* for the property. There was a property near the Eclipse which 18 months since might have been obtained for a nominal price, and during the last 12 months had paid $1,000,000 in dividends, and the property was now worth $500,000. Mr. Jones was next appointed manager, and according to what he had told him (the Chairman) the mine had not had the chance of becoming successful. The company possessed a valuable "ditch," while there could be no doubt as to the great value of the mine, indirect offers having been made about the sale of the silver ore; if only 3 or 4 tons per day were sold it would bring a good revenue. It appears the ore contained a large quantity of fine gold, so fine that it floated upon the surface of the water, and that the treatment hitherto carried out had entirely wasted all that valuable metal.

A SHAREHOLDER asked how it was the produce per ton had shown such a falling off, as compared with that previously obtained?—The CHAIRMAN said the first crushing yielded $19 per ton, a very satisfactory result, and the subsequent falling off was traceable to the fact that a contract had been let the miners, who were paid so much per ton, and as there was no one to look after them they put anything they liked through the stamps. Before concluding, he wished to take the opportunity of doing justice to Mr. Bluett; although Mr. Bluett was connected by marriage with Mr. Haymen, and it was not fair in any way to hold him responsible for the misdeeds of the directors, the liquidators had received every assistance from Mr. Bluett.

Mr. EUDEY strongly advised the meeting not to give up the property. In 1863 and 1864 he managed the mine for the original owners. His opinion of the property was still as good as that set forth in his original report, otherwise he should not have come to this country to ask them not to abandon it. He then read a lengthy statement, in which it was mentioned that he had secured the title to the mine for a valuable consideration, and would offer it to the company upon terms. With proper appliances the Eclipse Mine would become a great success, and if the shareholders allowed it to slip out of their hands it would be the crowning act of bad policy. The property comprised six miles of ditch—enough for three or four companies; in fact, he considered the property to-day worth four times what the company paid for it. He had paid $20,000 for the indemnities.

The CHAIRMAN said that Mr. Eudey had obtained a bond of the property, and in the course of a few days every shareholder would receive a circular stating what himself and other large shareholders intended to do. Every shareholder would be at liberty to have an interest in the new company; indeed, the same opportunities which he and other large shareholders possessed.

Mr. ATTRILL proposed that it would not be expedient for this company to at tempt to re-acquire the property, or to interrupt the present winding-up.

Mr. GETHIN seconded the proposition.

A formal resolution was also passed that the liquidators, or any of them, should be at liberty to enter into negociations to acquire the property to the same extent as they might have done had they not been liquidators or officers of the company.

A vote of thanks to the Chairman closed the proceedings.

SOUTH AURORA CONSOLIDATED MINING COMPANY.

A special general meeting of shareholders was held at the Cannon-street Hotel, on Monday,—to consider the provisional agreement entered into for developing a vast mining property in Canada, consisting of gold alluvial washings and gold quartz reefs—involving an outlay of about 3000*l.* in providing machinery, and making such trials as will fairly develope the resources of the estate, with the right to invest a further sum of 7000*l.* in the preference shares of the proposed English company. The bonus to be given to this company is 2500*l.* of ordinary shares for every 1000*l.* of preference shares subscribed. Practically, therefore, if the project be approved, the South Aurora Consolidated Mining Company would hold more than one-fourth of the entire property,

Col. STANFORD in the chair.

Mr. CHARLES CADOGAN (the secretary) read the notice convening the meeting.

The CHAIRMAN said this meeting, as stated in the notice, had been convened for the purpose of taking into consideration the propriety of becoming interested in an extensive mining property in Canada. Mr. Spratt, his colleague, who had given the matter the fullest attention, would explain the basis of the proposal, but the directors wished to leave the decision entirely in the hands of shareholders.

Mr. SPRATT said he had introduced this business to the notice of the directors, and was quite prepared to accept the responsibility in connection with it. He had known the property for years, and had some time since, in conjunction with several of his friends in London and Manchester, arranged a certain capital for its exploration; but one gentleman largely interested was unfortunately killed in the accident which happened to the Manchester express, which demoralised the arrangement. At that time Mr. Lockwood undertook a task little less than herculean of removing such a mass with so small a power at command—the object of that small company was to explore a tract of land in Canada known to possess gold. Certain explorations were made, the machinery at command enabling them to sink to a depth of 100 ft., and no more; but in seeking so much gold was found as to warrant a continuance of the explorations. The difficulty, however, was to find capital, for to-day, instead of the property consisting only of 340 acres, it comprised an area of 18,000 acres, embracing alluvial deposits and quartz reefs, extending over 100 miles. The shareholders were now asked to sanction an agreement to expend 3000*l.*—not to be paid to the vendors, but for the exploring this tract of country, known to possess a large extent of gold, and believed to be in considerable quantities—but that was the experiment. Something had already been done with 10 acres, as it had yielded gold to the value of 140,000*l.*, and they were told by those who profess to know that the amount extracted was more nearly $1,000,000, because the workings were conducted in a very wasteful manner. It was important to note that this amount of gold had been extracted from one lead only, and that the absolute gutter had not yet been reached; nuggets had been found weighing 71, 51, 30, and 4 ozs. Besides these alluvial deposits there were known to be enormous reefs of quartz, which had been tested upon a small scale. The owners possessed this large property, but not the means to develope it. The value of the property was attested by the President, Vice-President, and other influential gentlemen in Canada, who had identified themselves with it. Out of the 12,500*l.* entrusted to his (Mr. Spratt's) care he had offered the South Aurora Company 10,000*l.*; the remaining 2500*l.* he intended to keep for himself and friends, but any shareholder who wished might subscribe for a proportion. He then read the terms of the offer as set forth in the notice. No less than twenty-four gentlemen of the highest position in Canada testified to the great value of the property; and Mr. Pope, the Government Gold Mining Inspector, certifies as follows:—

I hereby certify that I was stationed at the Gilbert and Chaudière Gold Mines, as Government Gold Mining Inspector, for about seven years. I have read the foregoing statement, and declare that the facts therein alleged are well founded, reliable, and true. It was part of my duty as Gold Mining Inspector to collect periodically from all persons working at the mines statements upon oath as to the amount of gold taken out by them, and I have no hesitation in expressing my conviction that gold to the value of about $700,000 has been taken out of these mines, as alleged in the above statement, although mining was carried on, in most part, in the most desultory manner, and with the simplest and rudest appliances. During the whole period I was stationed at the mines mining operations were carried on as actively in winter as during the summer months.—R. POPE: *Quebec, May* 28, 1872.

Having such authorities as these coming forward to prove the *bona fides* of the property, there could be no doubt it was one of the finest properties ever laid before a mining company. Independently of the large amount of information thus obtained, he had been desirous of knowing even more, and had ascertained that a gentleman in this country had recently been over the property. He took upon himself the responsibility of asking that gentleman to attend a meeting of the board, which consisted of two practical men, who closely questioned the gentleman upon the most material points; besides which he (Mr. Spratt) had put twenty-six questions, the answers to which—as had been seen by the printed circular—might be considered a more crucial test than any report that could be made. That gentleman was in the room, and could answer any question that might be put to him. If the meeting decided to confirm the provisional agreement entered into by the directors they could not do better than place the working out of the scheme in the hands of such a gentleman. The English directors would be the directors of the South Aurora Consolidated Company, and there was a clause in the agreement that every 300 shareholders should be represented by a director, and the whole of the financial arrangements were to be in their hands. The whole of the money was to be devoted to the working of the property, with the exception of 250*l.* to be employed in defraying the expenses in connection with the formation and winding up of the original company. If this proposition be carried out, they would be able in May next, when all the machinery would be ready, to commence developing the ground, and in six weeks, he was told, the shaft could be sunk and the workings opened, when they would be able to say whether gold would be found throughout the ground. If the statements were borne out, and they only were able to explore three acres during the present season, that would give them a profit of something like 7500*l.* during the first year; the second year, 14,000*l.*; and the third and fourth years they should realise 20,000*l.* In the expenditure of 3000*l.* an amount had been provided—550*l.*—for something like sixty days' exploration upon the quartz formation, to test its value. It was not proposed to work the quartz reefs themselves, as these were sufficient to form 100 different companies. He did not in his calculation reckon anything from the quartz reefs, rather relying upon the alluvials to make them a fair return for the outlay they were now asked to sanction. They were asked to risk 3000*l.*, by which there was the chance of making a *coup*. He then proposed that the arrangement set forth in the notice convening the meeting be approved, and that the directors be authorised to invest the sum of 3000*l.*, and to exercise the discretion at their option of a further sum of 7000*l.*—The CHAIRMAN seconded the proposition.

Mr. APPLEGARTH said he could not give his sanction to the proposed agreement, nor could he recommend the shareholders to do so—at least, until the property had been examined by a thoroughly competent and independent authority. He should have no hesitation in accepting the proposition if the owners were prepared to guarantee a return of the 300*l.* if the explorations proved unsatisfactory.

A SHAREHOLDER proposed that the further sum of 3000*l.* should not be expended before approved by the shareholders.

Mr. T. G. TAYLOR asked if it would not be possible to make an arrangement with the owners for the repayment of the 300*l.* if the experiments should prove unsatisfactory? He did not think they should spend 3000*l.* without first making a most careful enquiry.

Mr. BERKENTEIL said it was unreasonable to suppose that such a proposition would be made had it been actually proved that the 18,000 acres contained gold, for five times the entire capital of the South Aurora Company would be insufficient to purchase such a property. He considered it was a good opportunity to employ 3000*l.* in what was really a good "spec.;" but the directors, as trustees, were not justified in making that spec. without first obtaining the sanction of the shareholders. The directors differed, and now came to the shareholders to decide.

A SHAREHOLDER enquired what amount of capital would be put into the Canada company?—Mr. SPRATT said 3000*l.*

A SHAREHOLDER enquired whether it had been stipulated that a certain amount should be expended in explorations?—The CHAIRMAN said that no agreement of that kind had been entered into.

Mr. LOCKWOOD, in reply to questions, stated that the property had been worked for four years without any suspension of operations during the winters.

After some further discussion, the resolution was put and carried unanimously.

Mr. APPLEGARTH said that, as the shareholders had decided to adopt the agreement, he would do the best he could for the company.

A vote of thanks to the Chairman and directors terminated the proceedings.

PORT PHILLIP AND COLONIAL GOLD MINING COMPANY.

An ordinary general meeting of shareholders was held at the City Terminus Hotel, on Thursday,—Mr. HENRY MOOR in the chair.

Mr. J. W. PURCHASE (the secretary) read the notice convening the meeting. The report of the directors (which has already appeared in the Journal) was taken as read.

The CHAIRMAN said he did not know that he had any information to give beyond that which appeared in the report. Of course, it was the business of the directors to give all the information they possessed, and they had done so; therefore, all he could do was to state that he should be glad to answer any questions which shareholders might wish to put. A telegram had been received and published stating that the yield of gold per ton had increased to 5 dwts. 2 grs., which was a considerable improvement upon the yield of last year. Mr. Bland had in hand on the other side, from profits, about 1400*l.* No portion of that had been divided between the Clunes and the Port Phillip Companies, as Mr. Bland had in view the annual expenditure for firewood, which came due at this time of the year. Now that the gold yield was improving, the directors hoped soon to be in receipt of remittances, and to be able to declare an interim dividend. (Hear, hear.) He then moved that the report and accounts be received and adopted.

Mr. A. T. THOMSON seconded the proposition.

Mr. BARDO wished to know how it was Mr. Bland's accounts were not placed in the hands of the directors?—The CHAIRMAN said they were incorporated with the accounts which were presented, but if any shareholder wished to see them in detail they could be seen at the office.

The CHAIRMAN, in reply to other questions, stated that Mr. Bland's salary from this company was 400*l.* a year, and an allowance of 200*l.* a year for house rent, whilst in addition he received on the joint companies' account 800*l.* a year, so that his entire salary was 1400*l.* a year.

Mr. ROBINSON said that while dividends at the rate of 22½ per cent. were being paid Mr. Bland should have been prospecting in order to provide for the future. He should like to know if Mr. Munday was still connected with the mine.

The CHAIRMAN said that Mr. Bland, writing under date Dec. 4, stated that Mr Munday was at that time examining mines in New South Wales, but a telegram had since been received to the effect that "Mr. Munday's mine report had been forwarded. Munday offers to re-engage with the company, but Clunes Company opposes." The board are not at present aware upon what grounds the Clunes Company opposes the re-engagement of Mr. Munday, but they will doubtless be able to overcome such opposition, in fact, they possess the power to do so. Mr. Bland writes that he should be glad to find some person in whom the board in London will have confidence to assist him in the company's affairs generally, and the mine in particular. His opinion was that picked men from the miners were the best to look after the mines—they have more experience than any other class. He (the Chairman) need hardly say the board were as anxious for dividends as any of the other shareholders, seeing there was a gentleman at that table holding over 6000 shares. It was important to remember that Mr. Bland had so reduced the cost that it now averaged 15*s.* 9*d.* per ton, which was much cheaper than that of any other company in the colony. The London management, including salaries, rent, &c., for the past year amounted to 383*l.*, and he could recollect the time when those expenses were 950*l.*

Mr. ROBINSON drew attention to the satisfactory results that were being realised from the North Clunes Mine, adjoining the Port Phillip property, and stated that he could not understand how it was their own property was not as prosperous.

The CHAIRMAN said it was quite true that the North Clunes Mine had been making large returns, but doubts were now entertained whether or not they were losing the run of their gold. As the Port Phillip worked at about two-thirds less cost than the North Clunes, the latter would probably find themselves in an awkward position. He was perfectly satisfied Mr. Bland was doing the best he possibly could for the company, and that the property was being worked as cheaply as possible.

A SHAREHOLDER said that both the directors and Mr. Bland had done all they possibly could to promote the best interests of the shareholders, and there could be no doubt if the gold was there it would be got, and as cheaply as possible.

Mr. DELAFOUNTAINE directed attention to the fact that North Clunes was working a much greater depth than themselves.—The CHAIRMAN added that the shafts were constantly being sunk towards the same depth.

The report and accounts were received and adopted.

Messrs. H. Moor (the Chairman), W. E. Wingrove, and S. Herapath, the retiring directors, were re-elected, and Messrs. Sutton and Teitkins re-appointed auditors.

A cordial vote of thanks was passed to Mr. Bland for his management of the company's affairs during the past year.

A vote of thanks to the Chairman and directors closed the proceedings.

VICTORIA (LONDON) MINING COMPANY.

A general meeting of shareholders was held at the City Terminus Hotel, on Thursday,—Mr. HENRY MOOR in the chair.

Mr. PURCHASE (the secretary) read the notice convening the meeting. The report of the directors (which has already appeared in the Journal) was taken as read.

The CHAIRMAN said the information the board had communicated in the report was not very satisfactory, but, at the same time, in the South Clunes Company, according to Mr. Bland's letter of Sept. 8, there was an extensive deposit of wash-dirt, and he had no doubt it would pay. In that case it would recoup all the loss sustained. The working expenses were very small; the disbursements in Victoria amounted to 11*l.*, and in London, including secretary's salary, rent, &c., to 70*l.* The interest received from the bank more than covered the expenses in London, and within 3*l.* of both the Victoria and London expenses. The directors had not taken any fees for years, nor had the auditors. He moved that the report and balance-sheet be received and adopted.

Mr. THOMSON seconded the proposition.

The CHAIRMAN, in reply to a question, stated that it appeared that Mr. Bland had committed an error of judgment in the selection of many of the investments It was important, however, to remember that Mr. Bland did not himself work those mines. Mr. Bland's complaints were that if those persons working them had only exercised common judgment, and made calls upon the respective shareholders at the proper time, the mines would have paid; and Mr. Bland's belief was that if now worked properly they would pay.

The report and accounts were received and adopted. Messrs. Bland and Westby were re-elected directors, and Messrs. W. S. Sutton and E. W. Wingrove were re-elected auditors.

A vote of thanks to the Chairman and directors terminated the proceedings.

SOUTH CARADON MINING COMPANY.

At a general meeting of shareholders, held at the mine, on Tuesday (Mr. RICHARD HAWKE in the chair), the accounts for three months ending November showed a profit of 519*l.* 6*s.* 9*d.* A dividend of 512*l.* (1*l.* per share) was declared, and 319*l.* 17*s.* 5*d.* carried to credit of next account. The following report was read:—

Jan. 27.—I am pleased in being able to report that the mine continues to return just the same quantity of ore as it has for sometime past, and of much the same quality. I see no reason to doubt of our doing this for some considerable time to come, but very much regret that the continued depression of the metal market, over which we have no control, has so seriously affected the profits.—JOHN HOLMAN.

BOG MINING COMPANY.

A special general meeting was convened for Wednesday, when (as there was not sufficient shareholders present to form a quorum) an adjournment till Feb. 17 was agreed to.

Col. CORBETT, M.P. (the Chairman), stated that he had received the following report from the manager:—

Jan. 27.—If the 175 turns out as we have every reason to expect, judging from the appearance of the lode in the bottom of the 163, we shall open up a fine piece of ore ground, and when sufficiently developed shall not have much difficulty in raising 70 tons of lead per month, but I fear the mouth of the mine is too near, and will not give enough time for extending the levels sufficiently far from the shaft to enable us to begin to raise lead. I think we may safely calculate upon laying open from 1000 to 1500 tons of lead ore, and we shall at the same time be laying open tribute and other paying ground in the eastern position at Buntin's shaft, which will assist in our returns, so that in six months from now, or by the end of July, we shall be in a position to return nearly 100 tons per month, providing our prospects at the 175 are equal to our expectations. I do not see any cause why the old mine should not continue to yield the same quantities of lead and blende as it does now. If men can be got to work them most of our men will be employed and under the 163, and an almost fresh staff must be looked for to work the upper portion. I think the Bog Mine as it now stands and presents itself is sufficient security for anyone to advance the money required, and I hope you will have no difficulty to convince the gentlemen on these points. The setting down of the water is a very encouraging feature for the future; the ground in the shaft is good for progress, and I think there will be no difficulty for the shaftmen to com-

plete their contract by the end of March month. The pitch in the bottom of the 163 is looking well. You will please observe by putting a larger number of men in companies reduce the number of pitches, which is explained in the report.

The CHAIRMAN: Some of the directors were prepared to increase their stake in the company by taking a considerable number of the unissued shares, which would do away with the necessity of borrowing so much money as suggested at the last meeting. They considered if they could raise 6000*l.*, in addition to (say) 2000 of the unissued shares, it would be sufficient for all their purposes.

A vote of thanks to the Chairman closed the proceedings.

PRINCE PATRICK MINING COMPANY.

The half-yearly general meeting of shareholders was held at the offices of the company, Seel-street, Liverpool, on Saturday, Jan. 24,—Mr. EDWARD COTTON in the chair.

The SECRETARY read the directors' report, as follows:—

It affords the directors great pleasure in again meeting the shareholders at the close of another six months, to be able to place before them a balance-sheet which they trust will be considered a favourable one, and to congratulate them on the general improvement of the mine, particulars of which will be fully explained in Captain Lloyd's report, now before the meeting. It will be seen from the balance-sheet, which is made up to Dec. 31, that all charges up to that date have been included, and that after all debts are paid there will be cash in hand to the amount of 1388*l.* 17*s.* This, together with the lead ore in stork on Dec. 31, valued at 807*l.*, and the capital at call 1420*l.* 10*s.*, will leave the company in possession of a reserve of 3616*l.* 7*s.* The directors consider it to be a very satisfactory position for the company to be in, especially when they take into consideration the vast amount of permanent work that has been done, such as the thorough repairing of Campbell's shaft to the 140 level west, the clearing up of this level, the completion of Hughes' shaft to the 100 south, and the banking up of the water by means of a dam, and landing same, with iron pipes, &c., to the great Swallow in the 100 east, which will effectually drain the mine to that depth at all seasons of the year. On surface there has also been a large amount of work done, such as the building of new lead-houses, changing houses, &c., all of which are now completed, and will save the company any further outlay for years to come. The directors hope that the shareholders will be satisfied with the dividend just paid, at the rate of 20 per cent. per annum on the paid-up capital of the company; it will certainly have been at the rate of 30 per cent., as promised last meeting; but, in consequence of Hughes' shaft not being got down to the lead-bearing ground so soon as expected, the sales of ore were limited, not through a scarcity of the ore, but of the means of getting to it. However, now that the new shaft is completed to the 100 level south, the directors can with more certainty promise the shareholders increased dividends in the future. The directors are pleased to be in a position to state that the ore in the great south-west lode continues as good as heretofore, the two ends now being worked on this lode producing 7 tons of ore to the fathom of driving. The 120 east and the 140 west on the Pant lode have also much improved, and are now producing ore in paying quantities. There is likewise an improvement in the 100 north, and in Hughes' shaft there have been good discoveries of ore ground at the 40 and 70 yard levels, and a staff of men have been placed to open out on these discoveries. Judging from the improved appearance of the mine at all ends, the directors feel certain that the sales of ore will soon be greatly increased, in which case it will be easy to not only increase the dividends, but also to pay them quarterly. In conclusion, the directors beg to state that their belief in the lasting productiveness of the mine is being daily confirmed, and that they have the greatest confidence in the management of Captain John Lloyd; and the shareholders may rest satisfied that every exertion, with a due regard to economy, as heretofore, will be brought to bear, so as to develope to the fullest extent this most valuable mine.

The captain's report was then read, as follows:—

During the last half year a large amount of tutwork has been done in comparison to the size of the mine, but it was essential to the proper and effectual developing of the various points and different veins in the sett, and also to make the concern a permanent dividend-paying property. One important object was to make a strong dam in the 100 west, in order to bank up the water in that part, so that instead of its finding its way to the bottom of the mine to be pumped up it will now be forced through iron pipes, &c., set to convey it to the eastern swallow, which will take it in any quantity at all seasons of the year. This piece of work, although a heavy and difficult one, is now completed, and answers the purpose admirably, and will save a large expense in coal, &c., annually, besides keeping floods at all times from retarding our progress in working the bottom parts of the mine. The stope above the 100 level, on the great south west lode, is still in a fine course of ore, and will produce 4 tons of ore per fathom for the width of driving alone (5 ft.), the vein being much wider than the breadth of stope, leaving equal back and bottom as well to work out for lead hereafter. The stope working north-east from the same level is now following the eastern side of the great lode, and is equally as rich for lead as my reports stated for many months back. The lode is proved to be above three fathoms wide already in this part, and the main wall not yet reached, and will produce on an average fully 3 tons of ore per fathom. The 100 level north has fallen off in value for ore in the last few fathoms of driving, but an improvement has now taken place of a favourable character, and we may expect to find a fresh course of ore very soon in this part of the mine. The winze sunk from this level to the 120 has gone through strongly mineralised ground from top to bottom, is holed through and completed for thoroughfare, and is of great convenience to work the east part of the mine. The 120 level east driven upon the Pant lode has gone through the bar of unproductive ground, and now shows a decided change of composition, and is yielding lead in paying quantities. A further improvement is anticipated shortly, the lode being a renowned productive one, especially in the measures we are now about to intersect. Campbell's engine shaft has been modified, and a set of pumps put in from the 120 to the 140 levels; also the latter level has been cleared out and repaired ready for driving west. We have set one stope in the back for ore getting, and shall have room for another stope shortly.—Hughes' Shaft: We have holed this shaft through to the 100 level, which is a great boon to the health of the whole mine, and will be of lasting value for ventilation, as well as to facilitate the working of the great south west lode and its tributaries. Independently of other essential points, two drivings, one at the 40 level the other at the 70, will now be started with a view of proving the value of the sections of productive ground discovered at those depths in sinking the shaft. Our changing-houses, ore sheds, dressing floors, and machinery are quite complete, and the mine all through in best working order. The 45 tons of lead sold on the 8th inst. were delivered last week, and we have between 30 and 40 tons now in course of dressing. Judging from the prospects and appearance of the mine last year, and comparing the present features of the different ends at work, together with the several chances of fresh discoveries almost certain to be met with, I find that the mine has gradually and steadily enhanced in value, and the reserves of ore are on the increase as fresh ground is developed, especially upon the great south-west vein, and the famous productive Pant lode.—JOHN LLOYD.

The CHAIRMAN said he did not think that any comment of his was needed to increase the satisfaction he was sure the meeting experienced upon hearing the reports which had just been read, and which not only fully explained the present cheering state of the mine, but moreover shadowed forth for it a brilliant future. They were now receiving very substantial dividends, and there was every reason to expect that the mine would in a short time be in a position to return them dividends at a considerably increased rate. He felt that the thanks of the shareholders were due to Mr. T. Hughes, who had, by his untiring efforts, brought the mine to its present successful state; and also to the board of directors, who had so ably seconded him. He would now move that the accounts and balance-sheet, together with the reports, as presented, be received and passed.

The proposition was seconded by Mr. MORTON, and carried unanimously.

The MANAGING DIRECTOR then suggested that as the captain was present the shareholders in the room might take the opportunity of asking him any question they might think fit, upon which several shareholders put various questions relative to the working of the mine, reserves of ore, &c., all of which were answered to the complete satisfaction of the meeting.

A vote of thanks to the Chairman terminated the proceedings.

SOUTH PRINCE PATRICK LEAD MINING COMPANY.

The first ordinary general meeting of shareholders was held at the offices of the company, Ann-street, Birmingham, on Monday, Mr. JOHN WALFORD in the chair.

Mr. HENRY HOWELL (the secretary) read the following report:—

The directors have very much pleasure in meeting the shareholders at this the first ordinary meeting of the company, inasmuch as they are able to report a measure of success rarely if ever attained by any company in so short a period. The company was registered on Sept. 19 last, but operations at the mine had been actively in progress for two months previously, consequently the work done may be said to have extended over about six months, during which time no less than 163 yards of ground have been opened up, the eastern shaft deepened 9 yards, the ladder-shaft and ladders all made good, and the entire mine put in thorough repair and working order. The result of these operations has been most satisfactory and encouraging. Within a few weeks of commencing the driving in the 53 yards level the great lode running north and south, known as Parry's flat, was intersected, and though for a considerable space in the drivings north and south lumps of ore were only occasionally found, the matrix of the flat afforded the strongest indications that deposits of ore in large quantities might be confidently anticipated as the works proceeded. On Dec. 24 last these anticipations were fully realised; the north forebreast presented a very rich run of ore, and the explorations for 10 yards in length, and upwards of 8 yards in height, have been in ore ground worth fully 70*l.* per cubic fathom.

The first sale of 20 tons of ore will take place at Holywell on Feb. 12, and Captain Jones is of opinion that 20 tons per month may be very safely relied on for the future, with a prospect of still larger returns as the mine is further opened. The directors have now to refer to the financial position of the company. The seven signatures to the Memorandum of Association subscribed 350*l.* for working expenses, and it being necessary to provide a further sum of 2000*l.* for purchase of the mines, a prospectus was issued and advertised. A few shares were only applied for by the public, whereupon the directors decided to assume the personal responsibility of providing the necessary capital. The purchase having been thus completed, all anxiety as to capital may be considered at an end, for the sale of ore, which will commence next month, will, it is believed, not only provide ample working capital but leave a handsome margin for dividends. The shares allotted, including the fully paid-up shares to the vendor in part payment of the purchase-money, represent 6957*l.* The amount expended upon the mine, exclusive of the purchase-money, is about 450*l.* The whole of the directors retire, in conformity with the Companies Act, but are eligible for re-election.

In moving the adoption of the report, the CHAIRMAN congratulated his fellow-shareholders on the great success which had thus far distinguished the company, and on possessing a mine of such unquestionable value. He also bore testimony to the energy and practical ability displayed by their manager, Capt. Jones.

Mr. John Walford, Mr. William Sunderland, and Mr. Henry Sunderland were unanimously re-elected directors, and Mr. William Richardson was elected to fill the vacancy caused by the retirement of Mr. Beech. Mr. George Beech was elected auditor, and Mr. Howell was re-appointed secretary, and a vote of thanks to the Chairman terminated the proceedings.

The following is an extract from the manager's report, dated Jan. 22:—"The north end looks exceedingly well. We have driven at present through about 10 yards of good ground, but nothing to compare to the very north end. We have sunk about 2½ yards to try the depth, and found the ground going down. We have also made a rise to prove the ground above the level, and I am glad to say it is rich above everything. From the bottom to the top of our rise there is 6 yards, and the ore throughout is yielding lumps of lead from 5 cwts. to 6 cwts. each. There are some larger yet in sight, in fact the rise looks a mass of ore and nothing else, and is worth fully 70*l.* per cubic fathom, and to all appearance is getting stronger."

GAWTON COPPER MINING COMPANY.

A general meeting of the shareholders was held at the offices, Austinfriars, on Tuesday,—Mr. HUNTER in the chair.

Mr. HICKEY (the secretary) read the notice convening the meeting, and the minutes of the last meeting were confirmed.

The accounts (charging six months' costs to December against four months' returns) showed a debit balance of 174*l.* 3*s.* 9*d.*

The CHAIRMAN stated that the committee had on this occasion thought it expedient to prepare a report to lay before the meeting as there were three or four important questions which required especial attention, and that all the shareholders should have a full knowledge of the facts, and those who were not present at the meeting would have a better comprehension of the proceedings. The committee's report was then read, as follows:—

The committee, in presenting the financial statement to the general meeting, it will be observed that five months' cost to Nov. 8 have been charged, in order to bring the costs up to the same period to which they were brought in previous years, the fifth month's cost forming the thirteenth pay of the year. But the committee, for the satisfaction of the shareholders, considered it advisable that a supplementary statement charging a further cost to Dec. 6 last should be attached, thus bringing the accounts up to the closest possible period, thereby showing the true position of the mine's affairs, charging six months' cost against four months' returns. With the approval of the general meeting the committee propose that the financial statement should be so rendered to the shareholders. It will be satisfactory to inform the meeting that the committee have endeavoured to have every liability to that date included, and they are assured there is nothing further outstanding. Under these circumstances, the debit balance of 174*l.* 3*s.* 9*d.* is smaller than might have been expected, especially as the mine laboured under great disadvantages by the increased prices of coals and other materials, combined with a low copper standard. Had copper advanced in the same ratio there is no doubt but that the mine would have been making satisfactory profits, as it will be seen that the four months' returns nearly meet the four months' cost. The committee regret to find the present mode of four weeks' payment is a source of very great inconvenience, inasmuch as it creates 13 pays in the year, and causes the month's pay-day to fall at irregular dates of the month, and more especially it deranges the piles of ore for the sales which take place at the usual periodical dates, and which have not been adapted to the altered circumstances of the new system of pay. There are also minor inconveniences attending it in not having the proper system of fixed monthly dates. In consequence of these drawbacks the committee proposed to the men at the mine to revert to the old method of a fixed Saturday of the month for the pay, and 12 pays a-year, in order that each month's cost may show distinctly against each month's return, the ore sales being bi-monthly, making six in the year. In the re adoption of the original system of calendar monthly payments the committee resolved that the men should in no way be losers by this change, as the 12 pays should be made equal to their 13. The men have raised an objection on the grounds that other mines of the district have not yet reverted to the old system, but would fall in with it if generally adopted. The committee hope that this will shortly be effected, which is being resorted to in some instances in Cornwall in consequence of the great inconvenience occasioned by the 13 pays in the year. Had this been foreseen there is no doubt that consent would not have been given for its adoption by mining companies.

The committee have again to express their regret that the negociation respecting Lord Mount Edgcumbe's land has not been brought to a definite termination, notwithstanding the efforts that have been made to accomplish it. It appears the chief cause of delay has been the illness of Lord Mount Edgcumbe's agent, and his absence from business for some months, and likewise it has been considerably retarded by the death of one mineral agent, his successor not being appointed for some time after. Ultimately Capt. Barratt was sent to inspect and report upon the mine; thus this matter was kept in abeyance by these various causes. It was not until Dec. 27 that anything definite was obtained from Lord Mount Edgcumbe's agent, and it will be for the meeting to express its view upon the subject, and the terms now offered. The committee made an application to the lords of Gawton for a reduction of the dues to 1 25th (until the mine made profits to the extent of 20 per cent.) on account of the increased cost of coal, iron, and other materials, with a declining standard of copper, but the lords, instead of reducing the dues have offered to contribute 10*l.* per fathom towards the cost of sinking the engine shaft 15 fms. deeper, and the committee believe, from what they have been informed, that the lords of Gawton will be ready to render further assistance when this is completed in driving the next level, and though it is manifestly to the interest of the lords to get this work done, yet the committee hope that the thanks of this meeting will be given them for their sympathy and co-operation in showing a disposition to give encouragement to adventurers who have hitherto reaped no substantial advantages. It appears imperative for the proper development of the mine, and to increase the returns of ore permanently, that this work should be commenced forthwith by the side of the lode.

Though the returns now nearly meet the expenditure of the present operations, the sinking of the shaft must of necessity increase the cost, but, from the report of the agents, there are considerable prospects of improvement in the mine, promising to increase the returns, which the committee hope may be realised, not only to meet the extra outlay, but be the speedy forerunner of profits to the adventurers. If the standard of copper should advance they think this may be fairly calculated upon, but, notwithstanding the prospects and the balance in favour of the mine up to the usual period of making up the accounts, it will be a question for the meeting to decide whether it would not be advisable to make a call in the event of the general meeting approving sinking the shaft. The committee have only to add that they have much pleasure in stating that the secretary, Mr. Hickey, the local purser, Mr. Bawden, and Capt. Rowe have diligently endeavoured to carry out the committee's views to effect these objects.

The report of the agents was then read, as follows:—

Jan. 24.—The 105 is extended east from King's engine-shaft 85 fms. 3 ft.; the lode in the end is 7 ft. wide, of a most promising description, yielding very strong mundic and fine stones of ore to the amount of 2 tons per fathom; there is a very cheering improvement to the east of small cross-branches, which we have recently passed through in the drivage. It may be satisfactory to explain the character of the lode throughout this extensive drivage, being the deepest level in the mine, which is most certainly of a very encouraging description, although the lode has been found to vary both in size and value, in places from 12 ft. to 18 ft. wide, yielding good quality ore to the value of 10*l.*, 20*l.*, and 30*l.* per fathom for some considerable length, which is going down in the bottom of the mine, with good prospects of improvement at the next level, judging from the fact that the north or flookan part of the lode in the upper parts of the working has at this depth come in contact with the hard capels, where we find the principal part of the good quality ore referred to; this is, indeed, a new feature in going down, and, in all probability, will be found increasingly productive at a deeper point. The 95 level is extended east of shaft 86 fathoms. The lode in the end is improved within the last 2 fathoms driving, with a good leader of mundic and ore, worth 10*l.* per fathom, and showing indications of further improvement. The 95, on the south part of the lode, is driven both east and west of cross-cut 4 fms. 3 ft., yielding now in the end 3 tons of ore per fathom, value 9*l.* The 82 is driven east of cross-cut 83 fms. 2 ft. The lode in the end is 9 ft. wide, being principally composed of capel and spar, intermixed with mundic and ore. Some short distance from the end a new winze is sinking about 12 ft. below the level, where the lode is worth 8*l.* per fathom. No. 2 winze sinking in the bottom of the same (82) is down 8 fms. 2 ft., in which the lode is worth 15*l.* per fathom. We calculate on opening some valuable stoping ground at this point as soon as the communication is made with the 95 below, which will also restore good ventilation. The 70 is driven 85 fathoms 4 feet east of cross-cut; the lode in the end is laid open 12 ft. wide, being composed of capel, spar, and mundic, mixed with ore. In the back of the 70 fathom level a stope is working, by four men, where the lode is improved, and worth 12*l.* per fathom. For the future prosperity of the mine in depth we think it very important (at the earliest convenience) to make the necessary preparations for sinking the engine-shaft to a deeper level at least 12 fms. below the present bottom, and then extend a drivage on the course of the lode beneath the before-mentioned ore going down below the 105 fm. level; worth 10*l.*, 20*l.*, and 30*l.* per fathom. At the same time, it is also very important to extend the different drivages east on the course of the lode for the purpose of making other valuable discoveries of ore in that direction, and beneath the former workings of the old mine; also continue the present operations on the productive parts of the lode by sinking winzes, cross-cutting where needful, and stoping upon the orey ground with as many hands as the nature of the work may require to obtain sufficient returns to meet as far as possible the current expenditure of the mine.—GEO. ROWE, GEO. ROWE, Jun.

The CHAIRMAN in moving the adoption of the reports and passing the accounts, stated that every pains had been taken to place the facts before the shareholders, and that the accounts had by a supplementary statement been brought up a month closer than in previous years, and as close as they could be. The present system of pay required revision, as it entailed much inconvenience and irregularity. It was a matter that demanded the serious attention of everyone interested in mining, and it was only by a consistent united action that this evil could be remedied, and he was sure that if the men were satisfied that the 12 pays should be equal to 13 in the year they would not stand out for that which was a source of inconvenience in all ways to adventurers and companies. Another matter for the meeting to consider was the terms of Lord Mount Edgcumbe's land, whether it should be retained or relinquished. Capt. Rowe would best explain the object of its connection with Gawton sett, as the sinking of the shaft appeared to depend upon it in a great measure. It was in the hands of the meeting to deal with it, and if this work was entered upon it would be necessary to provide for it by a call. The lords of Gawton having offered to allow 10*l.* per fm. towards sinking the shaft 15 fms. deeper was some inducement, though he could not help expressing his feeling that it was hard to pay royalty same time as paying calls in opening up the property. He wished to have the sympathy of the lords in this respect, and he believed that the course one great family adopted in Cornwall was that they never took dues except out of profits, and their mines were most prosperous; at the same time it was due to the lords to thank them for this offer of help. There was no question that the greater the encouragement the lords gave the better it was for the mutual interests of lords and adventurers; it created a bond of sympathy, and was a stimulus to go forward with energy. The facts were now before the meeting, and it was for them to decide upon the course to be pursued.

Capt. ROWE entered into a full explanation of the present position of the mine, and stated the prospects were improving, but that in the interest of the mine the true course to adopt was no doubt to sink the shaft 12 fathoms, and then drive levels east and west; to do this it was no doubt desirable to have Lord Mount Edgcumbe's land, as the deeper the shaft was sunk the nearer his boundary was approached.

Mr. MCCALLAN fully approved of the course the committee had pursued, and after the explanation of Capt. Rowe he had much pleasure in seconding the passing of the accounts and report.

Several shareholders expressed their entire concurrence in the re-adoption of the original system, and hoped that it would be followed up generally.

After discussion on the subjects in the reports, the following resolutions were unanimously passed:—"That the meeting have the pleasure of tendering their thanks to the lords of Gawton for assisting the adventurers by contributing 10*l.* per fathom towards the cost of sinking the shaft 15 fms. deeper, at the same time the present circumstances of the mine, with the high price of coals, materials, and labour, justify the meeting in asking the lords for a further concession in reducing the dues till profits are made."—"That the meeting fully empowers the committee to complete the arrangement with respect to Lord Mount Edgcumbe's land as they think fit in the interests of the company."—"That the meeting fully approves of the proposition to revert to the original calendar month payments, and every reasonable means be used by the committee for its adoption."—"That the committee of management be re-elected."

The accounts were passed and allowed, and, with the reports, were ordered to be entered on the minutes.

A call of 2*s.* 6*d.* per share was made.

A vote of thanks to the Chairman closed the proceedings.

GORSEDD AND CELYN LEVEL CONSOLIDATED COMPANY.

The half-yearly meeting of shareholders was held at the offices, Great St. Helen's, on Thursday,—Mr. F. RUDALL in the chair.

The SECRETARY (Mr. E. J. Bartlett) read the notice convening the meeting, and the directors' report, as follows:—

Your directors, in presenting the half-yearly balance-sheet, to Dec. 31 last, have to announce that Coetia Gelynen shaft has been sunk 20 yards below the level, and a cross-cut driven, with the object (now accomplished) of intersecting below the old workings the famous Holway vein. On the 16th inst. the vein was cut, and has since been driven upon in an easterly direction. Its character is in every respect most favourable, and the directors confidently expect considerable returns of lead ore from this part of the mine when properly laid open for the employment of additional men. The company possess a very long run of unexplored ground upon this lode, and should it prove as productive as appearances would warrant, the shareholders may be congratulated upon the possession of a valuable source of revenue. A full description of this and other important points is furnished by the report of the local representatives. The directors are pleased to inform the proprietary that greater progress has been made during the past six months than at any other period of the company's history, and they believe that the time is close at hand when their co-shareholders will be rewarded for their patience and ready response to the raising of fresh capital when required. A second very important result has been achieved this week—viz., the junction of the Gorsedd whim-shaft with the great adit level. This, as the local directors' and agents' reports explain, will at once materially reduce the cost, and contribute to the immediate production of ore. In view of the above results, so long looked for, the directors have to ask their co-shareholders to take up the remaining 300 unallotted shares at par, which will enable them to meet the current costs until the regular sales of ore announced in the local report commence. The retiring directors are Messrs. Rudall and Hughes, who, being eligible, offer themselves for re-election.

The agent's report was read, as follows:—

In laying before you my report for the last six months, I am anxious to pay my tribute of respect to both your late agents—Capts. John Jones and Wm. Williams, who have each died since your last meeting, in June. I have much pleasure in informing you that since my appointment as agent to your mine we have made good progress at all the points in operation, and with satisfactory results. In the first place, we have sunk the Coetia Gelynen pit to the desired depth of 20 yards; this is in solid rock of a very hard nature, and will never require any timber or repairs, which is a great consideration. We have also driven a cross-cut from this into the Holway vein about 7 yards in length, and I am happy to say the vein is really a splendid one, being fully 6 ft. wide so far as we have yet seen it, the whole of the vein stuff being good saving ground, and fit for the washing-floors, with some very fine lumps, a few specimens of which I have forwarded for your inspection. We have driven 4 yards on the vein eastward, and all the ground ent from this will be washed, at present we consider it is too wide to produce good ore, but when we have driven a few yards further it will become closer, and produce stronger ore; this it has done at the adit, 20 yards above; the ground is favourable for driving, neither requiring any timber or blasting, and, therefore, can now be worked very cheaply. The western side is equally good so far as yet seen, and will as soon as possible be worked, so as to enable us to be drawing ore for the wash daily. During the last two months the water has been troublesome, but by dint of perseverance we have been able to keep it under control, and since we have tapped the vein and driven on it there does not seem to be any material difference in the quantity, although the first sump is only 30 yards east of our present driving. We have also intersected the Gorsedd vein in the adit level, and have discovered a new run of ore in the same; we call it a new run because it has never been seen in the workings above; it was found after turning from the adit on the north and south vein, and driven along 15 yards, when it dipped below the adit, on the north and south vein, and has not been touched since. We are now washing the ore raised from this part, which will make about 5 tons. We have also sunk the Gorsedd whim-pit 23 yards, and I have much pleasure in informing you that we have this day communicated it with the adit without any mishap; it will take us some few days to complete this, when we shall commence to raise the ore left behind in the bottom of the adit, as well as trying some other points we have in view. We have also done some work at East Gorsedd, but have for the present left it, in order to concentrate all our efforts on Coetia Gelynen. I have endeavoured above to give you some notion of what has been accomplished within the last six months, and now that we have reached two of the points at which we have been driving since the formation of the company will state what we intend for the future. In the first place, we propose fixing a 6-in. pump in the Coetia Gelynen pit to draw the water from the bottom of the 20 yard sink into the adit; this will be done at once without disturbing the present pump, or ceasing to work on the vein. We have secured the lift of pumps, but have to cast the parts to supply motion, which will be ready next week. The cost will be about 60*l.*, and they can be worked by horse, steam, or water power, the pumps along being worth the money. Immediately the communication with the adit through the Gorsedd pit is completed it is intended to put one set of men to drive the adit to intersect the Merilyn vein: the distance is about 28 yards, which we hope to complete in less than three months. We shall now dispense with the two trammers as well as the two machine boys, as the stuff will all be drawn through the Gorsedd whim, and the mine will be well ventilated. The other set of men will be employed in raising ore, as well as several others whom we expect to employ. You will perceive from the foregoing that we have now reached two of the points stated in our first programme, and have yet to reach the Merilyn vein. We shall have but this sett of men working by the yard, the others will all be raising ore. We expect to have 20 tons ready for the March Ticketing, and unless some unforseen disappointment takes place we shall be able to raise this quantity every month, and when we reach the Merilyn vein should it prove anything like it was on the western side we could easily raise treble the amount, so that your mine in a very short time will become one of the richest properties in North Wales.—WILLIAM EDWARDS.

The CHAIRMAN, in moving the adoption of the reports, congratulated the shareholders upon the satisfactory position of the mine, commenting upon the discovery made below the adit upon the Holway vein, also the intersection of the adit by Gorsedd whim-shaft.

Some splendid specimens of ore received that morning were placed on the table, and some idea of the value of this discovery could be derived from their appearance.

After the usual business was transacted, votes of thanks were accorded to the Chairman and directors, and to Mr. E. J. Bartlett, for the very satisfactory form in which the accounts have been presented.

GLASGOW CARADON CONSOLS COPPER MINING COMPANY.

At the general meeting of shareholders, to be held at Glasgow, on Monday next, the reports of the directors and agents, and the statement of accounts, will be submitted.

The accounts show a profit on the year's working of 4505*l.* 14*s.* 4*d.* An interim dividend of 1*s.* per share on the original shares, and 9*d.* per share on the new shares, absorbing together 1791*l.* 7*s.* 9*d.*, was declared in September, leaving an available balance of 3566*l.* 19*s.* 10*d.*

The directors report that the operations at the mine have been prosecuted with the utmost vigour, and the development has proved the continuance, so far as the drivage has gone, of the run of ore ground on Harvey's lode to the east—the direction in which the sett extends for a long distance. The directors are glad to say that the output has realised their expectations, being larger in quantity and of as high produce, but they regret the price obtained for the ore has not been so good as during the preceding year. Various causes have combined to lower the price of ore, and a threatened strike of the smelters seriously and suddenly affected it for a time. The rates obtained have been lower even than the relative proportion to the produce of the ore. The sale of 2258 tons of ore in 1872 produced 14,710*l.* 3*s.*, whilst 3009 tons sold in 1873 produced only 14,153*l.* 9*s.* 7*d.* But for this unusual and unexpected state of the copper market the result of the year's operations would have been much better than of the preceding one. As the mine is being opened out there is every appearance of a still largely increased output; and, with higher prices for ore and reduced costs for coal and labour, the directors look forward to present a much better report at the close of the year now current.

Capts. William and W. J. Taylor, after reporting upon the various points of operation, congratulate the shareholders on the healthy appearance and prospects of the mine. The different levels have, during the past year, continued to open up quantities of profitable ground, and the 78 so far is turning out equal to expectation. They have a good deal of ore gone down in the bottom of the 65 for a very considerable length, all in whole ground to the 78, which this level will fully open up, some of which they will commence stoping forthwith. They have considerably increased the output of ore during the year, and the prospects for a continuance of the same, are fully equal to any former period. The returns for the year have been over 3000 tons, realising 14,153*l.*, and but for the very heavy fall in the standard for copper ores early in the year the proceeds would have been considerably more. This, together with the advanced price of all mining materials, as well as labour, has tended to reduce the profit they would otherwise have made. These are matters, however, over which they have no control, and they can only hope it will be better in the future.

[For remainder of Meetings see to-day's Journal.]

FOREIGN MINES.

GAULEY-KANAWHA COAL COMPANY.—Extracts from letters from general superintendent, Jan. 8 and 16:—"I enclose to you a section from actual and very careful measurements made to-day at my request by Mr. Straughan at the end of his timbering 50 ft. from the outcrop—Hard rock floor coal, 2 ft. 5 in.; parting, 5 in.: coal, 1 ft. 5 in.; parting, 5 in.: coal, 2 ft.; parting, 3 in.; coal, 1 ft. 10 in.: parting, 7 in.; coal, 1 ft. 8 in. Solid sand rock capping. The middle or 24-in. stratum I believe will prove to be a very fine splint. The other strata are bituminous, of the finest quality, hard, rich, and very compact, and so far as I can judge wonderfully free from sulphur. The 1 ft. 10 in. belt, immediately over the splint, is exceptionally fine, very black, and evidently very rich in gas. Although we have but fairly got under the cap rock, the coal is so fine a fuel that the neighbours are beginning to send in their wagons to haul it away for family use, paying us 5 cents per bushel (8s. per ton) at the mouth of the tunnel.

To-morrow Mr. Mason will put a strong force to work on the open-cut, at the entrance to the mine, and grade one arm of the "Y," so that we can lay down the track and carry out our good coal, and deposit it there in a temporary log bin, whence the neighbours can get their supplies, and where we will accumulate a large supply for our first shipment on the opening of the railway. It is our only means of taking care of this coal, and it is now all good, and will improve the further we go in.

— Jan. 16: We have over 2000 splendid logs ready, and getting out about 100 a day. The stave business is now fairly under weigh; over 8000 large "pipes" were finished when I was there, and they were getting them out rapidly. Two batteaux are building to ship staves to the railroad at the falls, and will be running within ten days more, moving 2000 staves a day.

ALMADA AND TIRITO.—The directors have forwarded to the shareholders extracts of letters lately received from Mr. Clemes, which they consider very satisfactory and encouraging: Extract of letter dated Dec. 2: "In Mina Grande the opening of the shaft is going on steadily, and the water in the lower old works is gradually sinking, being drained by the near approach of the tunnel; within the past few days we have been able to reach some of the lode to the north of the shaft, and close over the water; it is about 14 ft. wide, and well mixed with ore. I had a general sample taken, and stones from it have given the following results:—No. 1, lead ore, lead 65 per cent., silver only 89 per ton of 2000 lbs. No. 2, lead nearly same as last, silver 88 per ton. No. 3, mixture lead, copper, and gangue, $175 per ton silver. No. 4, copper ore, about 16 per cent. copper, and $165 per ton silver. No. 5, about the same for copper, and $120 per ton silver. No. 6, gangue, with a mixture of lead and copper, assay for silver $203 per ton. We are now preparing an average sample of the whole, both plain and concentrated, and when finished I will let you know the result. On the whole, I should say, so far as I can judge at present, it is a better lode than anything we have in Tirito, and is very encouraging. Besides it is not the part that has been always spoken of in such glowing terms by the natives, where it is said to be so wide, and to contain so much ore is still under water."

Extract of letter dated dated Dec. 5:—"Since the date of my last letter, the 2nd inst., we have made other assays of the stuff taken from the pillar in Mina Grande, and the following are the results:—No. 1. Concentrated by hand roughly, so as to have it less clean than could be done in the large way. Silver, 8324 per ton of 2000 lbs.; lead, 27 per cent., copper, 13 per cent. No. 2, another portion concentrated with the same object, but in a different manner:—Silver, $313 per ton; lead, 25½ per cent.; copper, 14 per cent. No. 3. The whole quantity brought from underground (say) 175 lbs. powdered, good and bad together, without any concentration. Silver, $197 per ton; lead and copper not assayed. The stones brought from underground were not exactly an average of the entire width of the lode, but were a fair average of the orey portions. Yesterday I make a further careful examination of the lode so far as it can be reached at present. It is about 14 ft. wide, and although it is very firm, so as not to require timber to support it, it is much easier to break than the lode in Tirito. The ore occurs mixed all through it, and probably less than one-half of it could be rejected as waste. As a check upon the samples already taken, we are now breaking down 3 tons of the lode, and will have it concentrated in the usual way and assayed, and whatever it yields of clean ore I will pack up and send to you as a separate parcel. The pillar from which the ore has been taken is exactly at the bottom of where the old mine has been unpillared; below this to the deepest point and further north not accessible yet. All the pillars I believe are standing on (say) fully one-half of the whole area of lode. What the length is, or even the depth, I cannot yet say, for the accounts given by the previous workers are very unreliable, but is is very gratifying that our first find in the old mine shows the ore to be very much more valuable than we ever expected. You will please remember that this ore is not available yet for regular working, so that the 3 tons for a sample is as much as we can do for the present. It is right the directors should have this piece of good news without loss of time, but they should not rely too much upon it, as that pillar may be richer in ley than those more in the main body of the branch. With this prospect before us, I am doubly anxious to have the tunnel communicated to the shaft, but, unfortunately, the cross cut is miserably hard, and unless the ground improves three months more will be spent over the work than I expected."

UNITED MEXICAN.—Mr. Edw. Hay, Guanaxuato, Dec. 24: Mine of Jesus Maria y José: In this mine the extraction of ore had decreased, on account of the necessity of fortifying the contracielo Del Pilar. This has been done, and as we are at work again on it, it is hoped that more ore will be got out. The compos de buscon in Santa Sofia are the best we have; they are on the boundary of the ground of Los Locos.—New Concern: The end of Santa Elodia, in the mine of San Antonio de la Ovejera, has improved. The strip of veinstuff cut in it looks well, and the whole end is in a ramification of quartz rock. The ground, also, is more favourable for driving. The end of the adit of Buenos Ayres was turned more to the south, to cut through the wall on that side. This wall, however, has twisted more to the south, and after leaving it we came upon a cross-course in steatite rock, running north and south, about a vara and a half broad. This was traversed, and the rock in the end has changed to a hard slate, discoloured by oxide of iron, of the same nature as that found before cutting the lode on a former occasion in the adit, and in the last cross-cut. The end is being continued with the direction of S. 88° W.

DON PEDRO NORTH DEL REY (Gold).—Telegram from Lisbon: Weighed to Dec. 30, 2791 oits.; estimate for December, 4300 oits.

RICHMOND CONSOLIDATED.—Telegram: "Two last weeks' runnings, $53,000. Two furnaces."

MINERAL HILL.—Mr. Oakes, Jan. 5: No change has taken place in the mines during the week, and the explorations go on with nothing to notice. The ore raised is 40 tons, of an average grade of $50 per ton. The ore sent to the mills from the waste dumps during last month was 419½ tons, of an average grade of $18·40 per ton.

ELDORADO (Nova Scotia).—The company's manager (Jan. 9) says:—Our machinery is old, but in fair working order. I would be glad to send fuller explanation of the cause of extra expenditure if I could. With the quartz raised, stamped, &c., I make return to the Government of the number of days worked in the mines. For May, 1873, 810 days; June, 875; July, 1215; August, 1325; Sept., 973; Oct., 725; Nov., 540; Dec., 455. This may assist you a little. Exploring and prospecting outside the Plough was the great cause. It was also the same during the summer months of 1872. The snow and ice are all gone, and the roads are in a dreadful condition just now. To get the machinery here and set it going would cost at least $500. I would strongly advise to wait until summer, though if you will give the order I will do it. There is so small a quantity of gold in the barrel of tailings I have to pass over our plates that I thought it best to wait a little till you gave the result of the barrel sent. I regret being able to send you only unfavourable news. If the return for January turns out badly, which I am afraid it will, I propose taking up the pumps, ironwork, &c., from the Plough, and stop all expenses. During November and part of December we were deepening the shaft. From the shaft eastwards there was a poor bar of ground to take out before getting into the streak. This will account for the loss in December. I had expected the streak to have gone at least 50 ft. deeper, but from appearances no quartz will remain by the end of the month. A little has also been done on tribute, and the men are still at work. I have about 30 tons of quartz to stamp during January for one of the mines near. Gold mining is very dull throughout the country. As I cannot have your reply to this until the middle of February I would again state that if we do not meet expenses this month I shall stop all work, and take up the pump. If you wish me to keep out water, kindly cable—"Sprague, Wine Harbour, Novia Scotia: Keep out water.—Brattle." This would not cost more than $10, but to keep out the water until your reply comes would cost $100. If no cablegram comes before Jan. 1, I shall take up the pumps, &c. In the meantime I will arrange to dispose of the horse, hay, oats, coals, &c., for cash, subject to your instructions, which please send per return. I had hoped the mine would have stood for some years. There is still a good chance on the Major Norton, but the arios both east and west should be had. On any other part of the property I do not see the least chance now. It is a matter of regret to leave just as one has got acquainted with the country, people, &c., but having done all in my power to ensure success it cannot be avoided.

TOLIMA.—The directors have advices by the mail of Jan. 27, of which the following is an abstract:—

Frias: November returns				£20,416 0
" Ditto expenses	£8647	6¼		
Less capital expenditure	635	7	=	8,011 7¾
Profit				£12,405 0¼
Sterling value of same				£2967 10 1¼
The manager reports	29 fms.	1 ft.	3 in.	ground exposed,
Of which	16	0	4	were unproductive,
Leaving	13	0	11	productive ground, which produced 248l. 4s. per fathom of the whole lode stoped.

Writing under date of Dec. 18, 1873, the manager observes—"The returns for the present month show that there is no falling off in the character of the lode, either in thickness or richness, and the sinks in the 20 are going down in equally rich ore to that now being stoped. So that, as far as we can at present see, there is no chance of any falling off in the produce of the mine. Other sources of ore than those at present in work are being opened out by the surface extraction level, and the south-west drive in No. 2 Spanish bottoms. The latter station appears to be coming into a very good bunch of ore, and the extraction level we know will be very productive, as it will open out large stopes some time since suspended for want of room for the attle. The mine never looked better than now, and it shows every prospect of continued large returns." The manager continues—"Extraction Shaft: A skip-road is now being put in, and the work necessary for the erection of a water wheel is advancing rapidly.—Engine-Shaft: This has been holed to the 30, but will require cutting down and timbering before the plunger-pumps can be fixed. All the pumping machinery has reached Santa Ana, and will now be brought up to Frias as soon as possible." The underground agent states that "the 20, on the 45° Welton's lode, begins to look favourable for producing mineral. We are approaching Webber's lode, where we expect to find a good bunch of mineral." "In the 10," he adds, "we are still stoping the bottom of the level, part of which has yielded rich ore. At this point we shall begin a sink to open out ground, which will also serve as a ventilation shaft for the 20, on the same lode." The assays of the month's returns show a very high grade of ore—2 tons 13 cwts. 2 qrs. 8 lbs. of the mineral consigned being stated to yield at the rate of 943·10 ozs. of fine silver to the ton, whilst 7 tons 2 cwts. 3 qrs. 14 lbs. were assayed as yielding upwards of 600 ozs. to the ton. With respect to the gravel deposits, the general manager states—"Since my last a native miner has discovered by means of trenches cut along the side of the Frias ridge that the gravel deposit is extensive and rich. This man assures me that with a small stream of water, and working in the native manner, the gravel would give $4 per man per day employed. I have, therefore, ordered him to bring on a stream of water and make the trial."

RICA GOLD-WASHING.—The directors have advices from their superintendent, Mr. C. R. Clarke, dated Dec. 18, of which the following is an extract:—I returned from Rica yesterday: while there I cleaned up 120 ft. of the sluice, but as the machine had only run 80 hours we could not expect much; got about 3 lbs. of amalgam, which will probably give 14 ozs. of gold. I send you water time, by which you will see that water has been very light, and that there has been much time lost with ditch. The break on the ditch was what we call a slip, or land slide; it is caused by the ground becoming saturated with water, and then sliding away; in this manner about 70 feet of our ditch slipped away, and had to be replaced with launders, which took five days. The gravel continues about the same. I shall run straight through the hill, so as to expose all the gravel and enable us to know just what we have got. I am now satisfied that with 200 inches of water we could return a dividend each month, and we may probably find better gravel still as we advance.

MALPOSA GOLD WASHING.—The directors have advices from their superintendent, Mr. C. R. Clarke (Dec. 18), accompanied by a remittance of 300l., already advised, from which the following is an extract:—Since I wrote you last I have made a partial clean up, by which I obtained 210 ozs. of amalgam, which gave 82 ozs. retorted gold. Our works are advancing very satisfactorily. Since the clean up in September we have advanced our cut over 200 ft., with an average of 100 ft. in width; but during the last month, as we uncovered the hard gravel over which we are now washing, we found that it rose with a much heavier grade than it did further back, and the waste has also increased in depth, and now averages 15 ft. deep. These two causes have reduced the new dirt to rather a thin layer, but cannot last long, as we are going ahead rapidly, and must get through all the heavy waste within 200 ft., and if we are fortunate enough to have rain for two or three months longer we shall be close up to the high banks in the spring. Our last clean up was not as good as I hoped it would be, but taking into consideration the great increase in the waste and the rise of the hard gravel, it was a very good return for the work done. Our pay-dirt between the waste and hard gravel has pinched down to about 8 ft., but I am certain it will increase again in a short distance. Our sluice cut in the hard gravel is now about 14 ft. deep, and I am expecting very soon to cut through into the rich gravel below; and, from the present appearance of the gravel ahead, I should not be at all surprised if I got on the bed rock before reaching the banks, and by the time we reach the banks we shall have the mine so thoroughly prospected that we can tell almost to a certainty what returns may be expected from any part of the mine now opened. After cleaning up this month we added 70 ft. of sluice, 40 ft. at the lower end, and 30 at the head. To-morrow I shall probably move the machine up to the bank, which is now 150 ft. away, and at the same time add 40 ft. of sluice to the lower end: this will require about a day and a half. Next week we shall be forced to lose time with the Christmas feasts, so that I shall not be able or justified in making a clean up before the middle of January. However, you can depend I shall lose as little time as possible.

MALABAR GOLD WASHING.—The directors have received from their superintendent, Mr. G. B. O'Reilly, Dec. 16, the following report upon the progress of the works:—"Referring to and confirming our previous reports we now beg to add the following note of the progress of the works to date.—Acequia: The hard granite ledge at the head of the upper ditch is now nearly blasted through, and the carpenters are at work on the spot laying sills for the plume which will conduct the water of Medina into the ditch. We are happy to state that this heavy job is now approaching completion. The whole length of the upper and lower acequia is now complete as far as the digging of the ground is concerned, but before we can turn in any water we have still some two months' work to secure the ditch, clear out heavy slides, &c.; but it is extremely satisfactory to state that all the heavier portion of the work is now accomplised, and we look forward with great confidence to the speedy and successful opening of the mine. Mr. Welton examined the ground, and is fully convinced that the success of the concern in a great measure depends upon our plans being thoroughly carried out; this gentleman will confirm and substantiate our views in all and every respect.—Outlet and Sluice: The ground has been levelled and cleared for laying the sluice, and the lumber for the same is nearly ready. As we purpose starting with only 500 ft. of sluice the work will not be so heavy as we at first anticipated, and in January we shall have our carpenters and smiths, and a number of peons put on this week. We are having the forest cleared from the end of the lower ditch to the mine, so as to have clear ground ahead of our work for laying down the pipe.

General Remarks: The more we become acquainted with the general position and aspect of the Castellla Mine the more confidence we feel as to the result being highly satisfactory. We have every element of position of all outlet and water in our favour, and if the pay in the gravel corresponds in any degree to these advantages, of which we can entertain no doubt, the mine will prove a highly valuable property. Our ditch is carried to a point which will render the large supply of water we possess available for the working of one or more mines on the north side of the range. These mines can be brought into profitable work at a mere nominal cost, as the only outlay necessary will be for lumber, carpenters' work, and the monitor, or monitors, required, with perhaps a few hundred feet of pipe. It is well to bear in mind that this is not one of the least of our advantages; we have water provided for three mines on the scale of Sweetland Creek, and the cost of running these mines will be extremely moderate, as there will be no increase in the item of superintendent and the water charges. The Christmas holidays will this month interfere to some extent with our progress, as the peons leave for two or three days; however, we shall make up for lost time in January, by putting on a few more men.

[For remainder of Foreign Mines, see to-day's Journal.]

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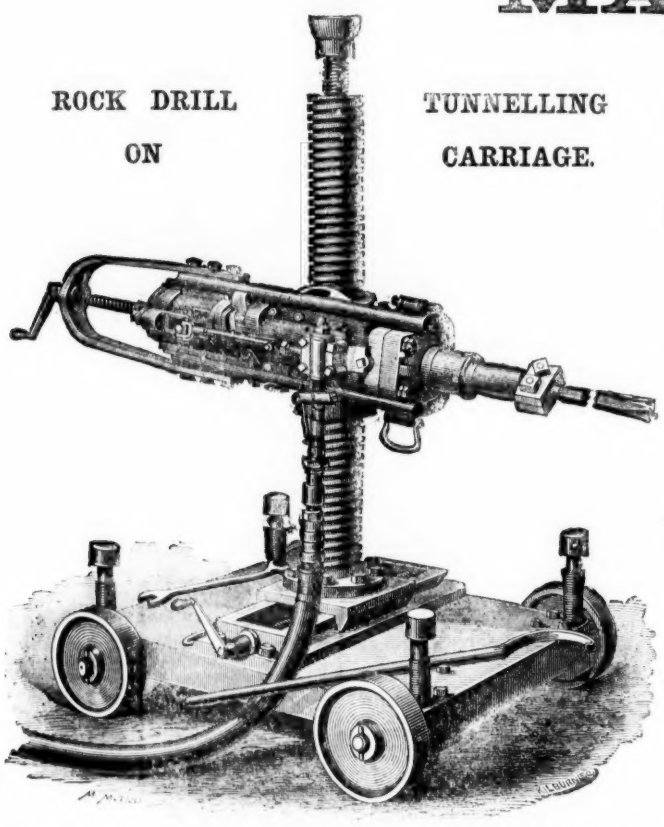

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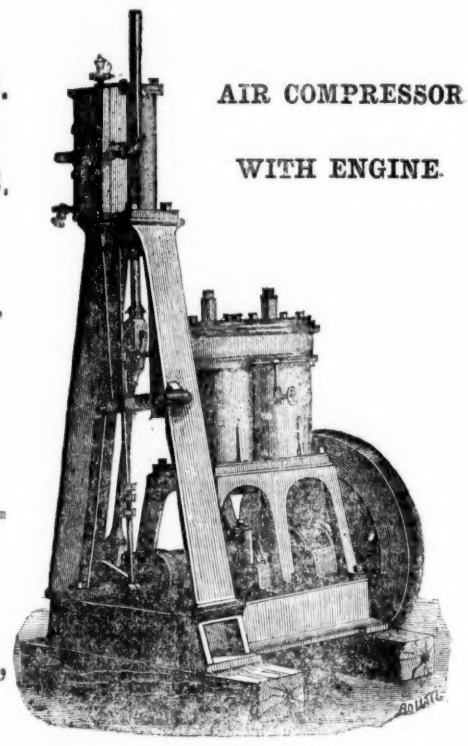

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* *Extract from Paper read before the British Association at Bradford, 1873, on Brain's System of Mining and Shafting Sinking at the Drybrook Iron Mines, Forest of Dean, using the "Burleigh" Rock Drilling and Air Compressing Machinery:*

(Shaft 10 ft. Diameter.)

COST OF SHAFT BY HAND

During a Fortnight.

Sinkers, twelve, 12 days each, at 5s. 6d.	£39 12 0
Water Fillers, three, 12 days each, at 3s. 6d.	6 6 0
Blasting powder	1 2 0
Total	£47 0 0

Depth Sunk 3 yards—Cost per yard . . £15 13s. 4d

COST OF SHAFT BY MACHINE

During a Fortnight.

Sinkers, three, 12 days each, at 5s. 9d.	£10 7 0
Labourers, six, 12 days each, at 3s. 6d.	12 12 0
Engine Stokers, two, 12 days each, at 2s. 6d.	3 0 0
Dynamite, 60 lbs., at 2s.	6 0 0
Electric Fuses (Brain's) 20 per day, at say 6d. each	6 0 0
Coal for Air Compressing Engine, 12 tons small, at 10s.	6 0 0
Oil for engines	0 5 0
Total	£44 4 0

Depth Sunk 5 yards—Cost per yard . . £8 16s. 9d.

THE ABOVE STATEMENT REPRESENTS WHAT IS NOW BEING DONE AT THE ABOVE MINE.

ADDITIONAL TESTIMONY.

(COPY.) *The Weardale Iron and Coal Company, viâ Darlington, Sept. 6th,* 1873.

Messrs. T. BROWN & Co., 96, Newgate Street, London, E.C.

DEAR SIRS,—I have much pleasure in informing you that the Rock Drill and High-pressure Boiler, with which you supplied us, are both working extremely well.

I am, yours truly,

(For the Weardale Iron and Coal Company, Limited),
J. R. CRONE.

(COPY.) *Crossfield Iron Ore Works, Crossfield Moor Row, viâ Carnforth, Sept. 8th,* 1873.

DEAR SIRS,—In reply to yours of 2nd inst., I am sorry I have not time to go into the comparative results of hand labour in sinking with that of the work done by your "Burleigh Drill." All I can say is, that for the last few months it has been giving me every satisfaction, and there is a marked difference in the progress of our sinking operations.

I am, yours truly,
JOHN MAIN.

* **The Paper can be had upon application to THOMAS BROWN & CO., 96, Newgate Street, London, E.C.**

TANGYE BROS. & HOLMAN,

LAURENCE POUNTNEY LANE, LONDON, E.C.,

AND BIRMINGHAM (TANGYE BROS.), CORNWALL WORKS, SOHO.

TANGYE'S IMPROVED HAND-POWER LIFTING MACHINERY.

Manufacturers of

SCREW

JACKS.

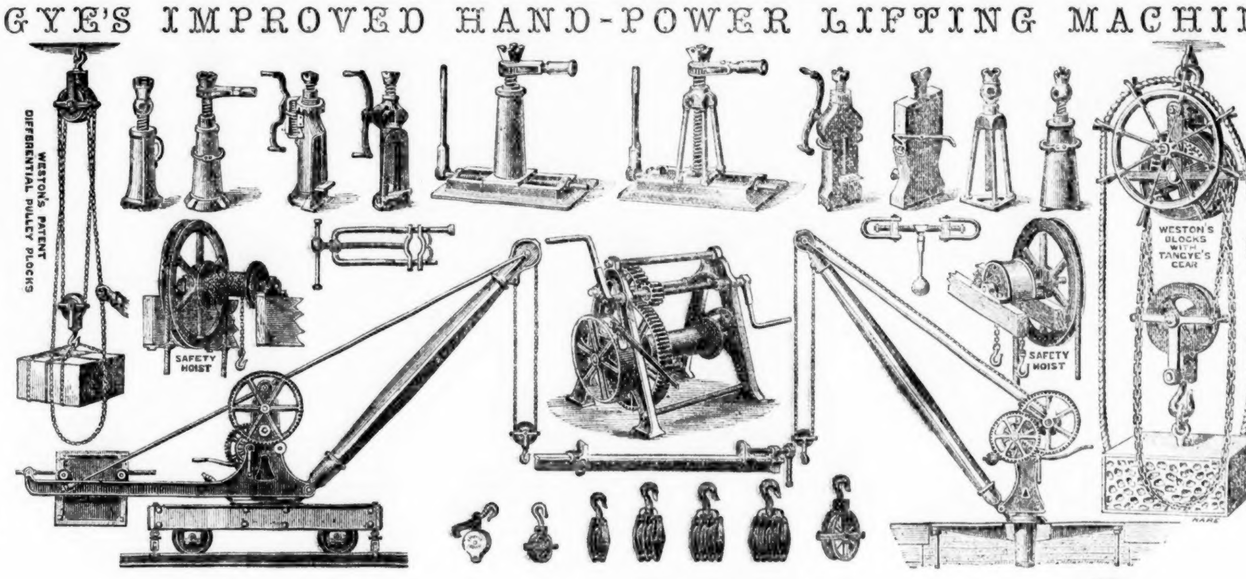
HOISTING

CRABS.

PORTABLE

AND FIXED

CRANES



Manufacturers of

WESTON'S

PATENT

DIFFERENTIAL

Pulley Blocks.

Wrought Iron

LONDON

PATTERN

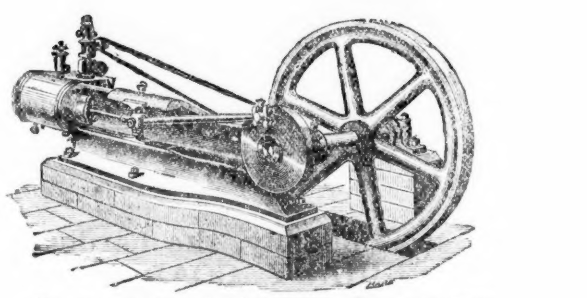
Pulley Blocks,

AND

Every Description of

LIFTING

MACHINERY.



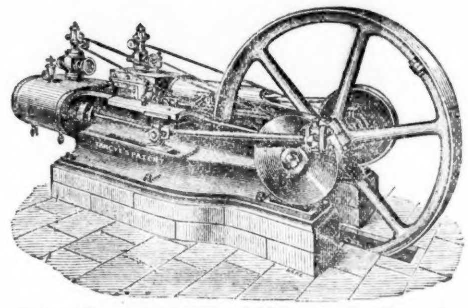
Tangye's Horizontal High-pressure Expansive Steam Engine.—Over 900 sold since introduction in Dec., 1869.

The bed-plate, front cylinder cover, cross-head guides, and plummer-block for crank-shaft bearing, are all cast in one piece, the cylinder with its valve-chest being bolted to the end of the bed. The cross-head slippers and connecting-rod ends are made adjustable, so that any wear can be readily taken up. The fly-wheel, cylinder-end, connecting-rod, and crank-plate are all bright. All the parts are made to Whitworth's Gauges, and the material and workmanship are of the highest class throughout.

PRICES.

Size.	Indicated H.-P.	Diameter of Cylinder.	Length of Stroke.	Price of Engine.	Feed Pump Extra.	Variable Expansion Extra.	Link Motion Extra.
		in.	in.	£ s.	£ s.	£	£
B	3·8	4	8	32 0	3 0	—	—
C	5·9	5	10	38 15	3 15	—	—
D	8·6	6	12	46 0	4 0	10	20
E	15·0	8	16	70 0	5 10	12	20
G	19·4	9	18	90 0		13	20
H	23·9	10	20	115 0	7 10	14	22
J	34·5	12	24	135 0	8 0	15	22
	45·0	14	28	175 0	10 0	16	25

Prices of Boilers on Application.



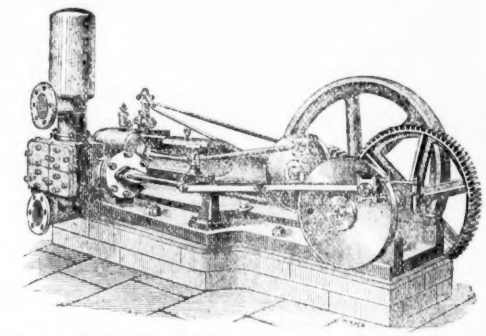
Pair of Tangye's Horizontal High-pressure Expansive Steam Engines.

In design and workmanship these engines are precisely the same as the foregoing, but being made right and left hand, they can be coupled for many purposes with great advantage. The crank-shaft can be made any length, and the fly-wheel replaced by pulleys or drums. Link motion can also be applied, and when so fitted they are eminently adapted for winding from mines.

PRICES.

Size.	Indicated H.-P.	Diameter of each Cylinder	Length of Stroke.	Pair of Engines.	Feed Pumps Extra.	Variable Expansion Extra.	Link Motion Extra.
		in.	in.	£	£ s.	£	£
B	7·6	4	8	65	6 0	—	—
C	11·8	5	10	79	7 10	—	—
D	17·2	6	12	94	8 0	20	40
E	30·0	8	16	142	11 0	24	40
G	38·8	9	18	183	12 0	26	40
H	47·8	10	20	235	15 0	28	44
J	69·0	12	24	275	16 0	30	44
K	90·0	14	28	350	20 0	32	50

Prices of Boilers on Application.



Tangye's Horizontal High-pressure Expansive Steam Engine, combined with Holman's Double-action Pump.

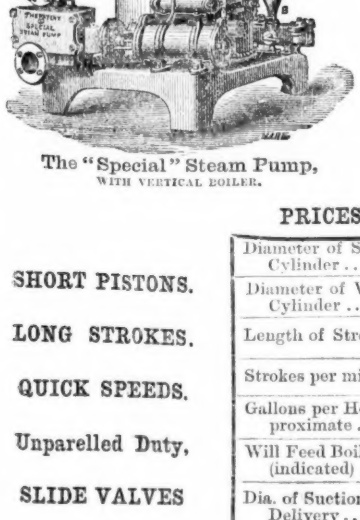
These engines can be used for pumping only, or pumping and driving other machinery simultaneously; or, by the sliding of a single pinion, the engine can be disengaged from the pump, and the former employed exclusively for other purposes.

PRICES.

Size. Indicated H.-P.	C 5·9	D 8·6	E 15·0	G 19·4	H 23·9	J 34·5
	£	£	£	£	£	£
Engine anp 3 in. Pump . . .	62	—	—	—	—	—
Do. and 4 in. do. . . .	68	75	—	—	—	—
Do. and 5 in. do. . . .	—	78	112	—	—	—
Do. and 6 in. do. . . .	—	89	117	135	160	185
Do. and 7 in. do. . . .	—	—	124	145	172	195
Do. and 8 in. do. . . .	—	—	135	160	185	205
Do. and 10 in. do. . . .	—	—	—	—	205	235

The Prices include Feed Pumps on Engines.

The engraving represents all up to and including the E size; all above that size, the base-plate to carry whole (if required), would be extra.



The "Special" Steam Pump,
WITH VERTICAL BOILER.

VIENNA

EXHIBITION,

AWARDED

HIGHEST PRIZE

MEDAL

FOR

STEAM PUMPS.

PATTERNS

FOR

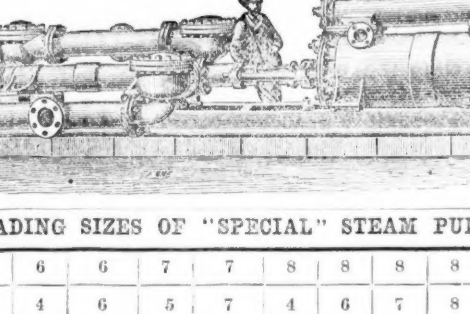
200 SIZES

and Combinations of the

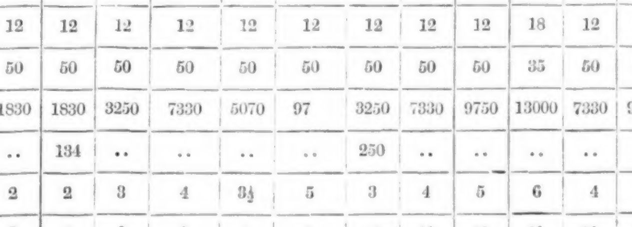
SPECIAL

STEAM PUMPS

Are now in Stock.



The "Special" Direct-Acting Steam Pumps.



VIENNA

EXHIBITION,

AWARDED

HIGHEST PRIZE

MEDAL

FOR

STEAM ENGINES.

OVER 3,000

OF THE

SPECIAL

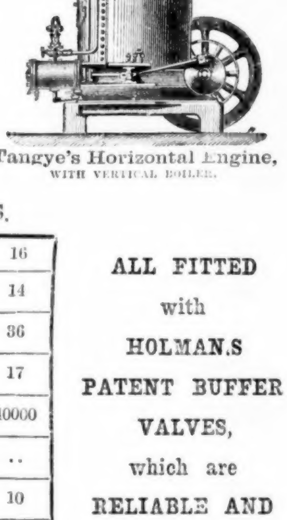
STEAM PUMPS

HAVE BEEN SOLD

FOR

Every variety of Purpose, including over 500 for

DRAINING MINES.



Tangye's Horizontal Engine,
WITH VERTICAL BOILER.

PRICES OF A FEW OF THE LEADING SIZES OF "SPECIAL" STEAM PUMPS FOR MODERATE LIFTS.

SHORT PISTONS.

LONG STROKES.

QUICK SPEEDS.

Unparelled Duty,

SLIDE VALVES

and

PUMP VALVES,

All Easy of Access.

Diameter of Steam Cylinder	In.	3	4	4		6	6	7	7	8	8	8	8	10	10	12	12	14	16
Diameter of Water Cylinder	In.	1½	2	3	3	4	6	5	7	4	6	7	8	6	7	8	10	12	14
Length of Stroke ...	In.	9	9	12	12	12	12	12	12	12	12	12	18	12	12	18	24	24	36
Strokes per minute		100	70	50	50	50	50	50	50	50	50	50	35	50	50	35	25	25	17
Gallons per Hour—Approximate		680	815	1830	1830	3250	7330	5070	97	3250	7330	9750	13000	7330	9750	13000	20000	30000	40000
Will Feed Boilers up to (indicated)	H.P.	50	68	..	134	..	..	..	..	250	..	..	..	..	..	..	..	..	..
Dia. of Suction and Delivery	In.	1	1¼	2	2	3	4	3½	5	3	4	5	6	4	5	6	8	9	10
Diameter of Steam Pipe—Inlet	In.	½		¾	¾	¾	¾	1	1	1¼	1¼	1¼	1¼	1½	1½	2¼	2¼	2¼	2½
Diameter of Steam Pipe—Exhaust .	In.	¾	1	1	1	1	1	1¼	1¼	1½	1½	1½	1½	1¾	1¾	2½	2½	2½	3
Total Length and Width	In.	36×6	42×8	48×14	48×13	41×15	51×17	54×18	55×20	51×17	54×19	56×21	66×22	58×21	58×21	74×25	94×27	100×30	130×36
PRICE		£16	£20	£25	£30	£40	£47 10	£50	£57 10	£50	£55	£65	£85	£70	£80	£100	..	..	..

ALL FITTED

with

HOLMAN.S

PATENT BUFFER

VALVES,

which are

RELIABLE AND

DURABLE

under

1500 FEET HEAD.

Any combinations can be made between the Steam and Water Cylinders to suit Pressure of Steam and Height of Lift—thus, 8 in. Steam and 3 in. Water, or 10 in. Steam and 3 in. Water, and so on. The Length of Stroke can also be increased at a proportionate extra charge.

LARGER SIZES OF THESE PUMPS ARE SUPPLIED FOR FORCING WATER FROM MINES TO HEIGHTS UP TO 1500 FEET IN ONE LIFT. (SEE GENERAL LIST.)

Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors), at their office, 26, FLEET STREET, E.C., where all communications are requested to be addressed.—*January* 31, 1874.